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The Cultivator & Country Gentleman.

TWO DAYS IN NEW-JERSEY---II.

We remarked in our preceding article that Farm Improvement in Burlington county has been owing mainly to three causes, and named one of them as being the Underdraining of the land. We now go on to specify the others:

II. Marling and Liming.

Taking the great body of the productive land of the county, the application of Marl and in some places at not too great a distance from the Delaware river, of Lime also, has probably done even more than draining to restore the lost fertility of worn out soils, and to add to the crops obtained on farms not exhausted, not only on the Upland, but, after the draining has been performed, on the Meadows also. Some of the best farms, have been limed nearly or quite throughout, but as this material has to be brought from Pennsylvania, it is too costly to be as frequently and liberally used as would probably otherwise have been the case. On some soils its effects are of the most satisfactory nature, but Mr. WATSON NEWBOLD pointed out to us a meadow of ten acres, in which he had tried the experiment of putting it on in strips, and on a part of which the grass had derived no perceptible benefit whatever from the trial. Actual experiment he thought to be the only test which can determine the expediency of its use. His upland, however, has all been limed three times during the past thirty years, to an amount aggregating about a hundred bushels of lime to the acre; and he ascribes to the introduction and increased extent of the practice of Liming, the increased growth of the Wheat crop of late years, particularly on farms like his own, not considered quite "natural" to this grain.

Marling is rendered cheap and easy by the presence of abundant marl deposits in various parts of the county. We visited Gaskell's marl beds a little more than four miles east of Mt. Holly, near the railway running from that place to Pemberton. A branch track had just been laid down to this bed, so that its contents are now rendered accessible to all parts of the State. A little stream running through the bed, had worn a passage which left the hillside containing the marl so exposed as to make its excavation easy. About 4 feet below the surface of the ground is a thin stratum of greyish marl, followed by a second of black color, and then by the "green sand marl" most in request. Still farther down the deposit assumes a chocolate hue. The depth to which it is taken out is about 25 feet, and the quantity within reach is almost limitless. Twenty-three cubic feet are rated at a ton, and this would be equivalent to nearly a ton for every square foot of surface. The price charged is 25 cents per ton, loaded on the cars. Prof. COOK of Rutgers College, in the course of his Geological Survey of the State, visited these beds, and took samples for analysis. In the report submitted by him in 1856, we find the following statement of the composition of the marl:

Analysis of Green Sand Marl from Burlington Co., N. J., by Prof. Geo. H. Cook.

Water,	10.260
Silica,	46.660
Prot-oxid of iron and alumina,	24.921
Potash,	6.819
Lime,	2.865
Magnesia,	3.089
Phosphoric acid,	3.591
Sulphuric acid,	0.989
	99.194

Of these constituents it is probable that those of no particular chemical value, are mechanically beneficial in certain soils. The low lying meadow land which is so full of vegetable matter as to be quite peaty,* may not contain a very large proportion of silica; and this is supplied in the marl, which by decomposition liberates it in soluble form in large quantity. The prot-oxid of iron generates ammonia, Prof. COOK states, in the change to a peroxid which takes place under the action of air and moisture. "The peroxid of iron and alumina, together with the silica," says Prof. JOHNSON in his Report on Fertilizers to the Connecticut State Ag. Society, "are important means of increasing the power of the soil to absorb and retain manures." It is the potash and phosphoric acid, however, which form the most valuable constituents on the list. Prof. Johnson expresses the opinion, based upon analyses of marls containing considerably less of these two ingredients than are indicated above, that *they* were worth, bushel for bushel, more than leached ashes. Prof. Cook states that marl is used in New-Jersey

* There is little, if any, actual Peat in these meadows: Mr. NEWBOLD speaks of their soil as being a "natural mud;" but it appeared to us (without a very minute examination, however,) to contain a sufficient preponderance of organic matter to entitle it to the qualifying adjective "peaty." (See Dr. Voelcker's classification of Soils, Morton's Cyclopedia, vol. ii, p. 871.) It is certainly a "vegetable mould," evidently very rich in humus. The presence of bog iron ore, referred to in the first article, was perhaps spoken of in too general terms; it is found in occasional, rather than in "numerous" instances.

at distances from the beds at which the cost per bushel, with a fair allowance for labor of transportation, "could not have been less than from 12 to 16 cents. Instances are known where it has been thought remunerative at 25 cents a bushel." The last named rate would be equal to about $4 per ton, and we fancy it would be very difficult to get an equal quantity of potash and phosphoric acid—say 135 lbs. of the former and 70 lbs. of the latter—in any other form without paying a larger price than this. The phosphoric acid, although not in soluble form, "is disseminated through the marl in small particles in a pulverulent state,—a form," says Prof. Cook, "much more available for growing vegetation than the hard and slow-decaying fragments of bones which have been crushed in a mill."

Enough has been said to show the advantages enjoyed by those who are so situated as to be able to procure a fertilizer of such value almost at their own doors, and at little more than a nominal price. The quantity applied per acre differs very much with the distance from the beds; those living in their immediate neighborhood applying exceedingly heavy dressings, while those at considerable distances will put on from one to two hundred bushels. JOHN BLACK, Esq, of Locust Grove, to whose experience in draining we have already referred, told us that he remembered when the use of marl commenced about sixty years ago, although it was not applied very largely until a later date. He thought its best effects were shown on land at the same time moist and sandy, but he marled all his farm. Mr. GASKELL at the marl-bed, whose farm—at least the part of it above the marl—appeared to be naturally poor, thought the grey marl nearest the surface quite as valuable as the green, and told us that on his land it had produced excellent crops.

III. Attention to Farm-Yard Manures.

As Marling and Liming extended, and land before too wet for use was Drained and rendered productive, the capacity of those farms possessing a considerable proportion of meadow land, for the pasturage of stock in summer and feeding in winter, was greatly increased. The best farmers have availed themselves of this fact to pay increased attention to the manures of the farm-yard, and by their use have still farther added to the productiveness of the uplands—improvement in this respect supplying in turn greater quantities of straw and stalks to be trodden down into manure, as well as more grain to feed and sell. Thus, under good management, everything is made to work in together toward the annual returns obtained, as well as for the permanent improvement of the farm.

A better example could not perhaps be taken than Mr. WATSON NEWBOLD'S farm, on which we understood that five or six times the stock is now fed that it could carry when first purchased. As about two-thirds the 175 acres it contains are meadow land, in permanent grass, the remaining third has been brought to a very high state of cultivation; although not as good a wheat soil as some others, the standing crop appeared to afford still better promise than that of 1862, when 25 bushels per acre was yielded, and the corn crop has been of late years from fifty to sixty bushels per acre.

Farm-yard manure is generally piled in the yards in spring, although there is a difference of opinion as to whether benefit is really derived from the handling and subsequent decay, or not. So far as we inquired it seemed to us likely that where the farms were mainly upland, and thus afforded greater quantities of rough litter, the expediency of securing the more complete decomposition of the manure was recognized; while, on the other hand, in cases where the quantity of stock kept was larger in proportion to the stalks and straw to be converted into manure, it lies in yards, in spring, in a condition more nearly adapted for use.

System of Cropping and Feeding.

The meadow land has most of it never been plowed. On some farms the sod has been turned over and a crop or two put in, and re-seeded in order to level inequalities of the surface—a proceeding rendered more essential than before, since the introduction of mowing machines. On some meadows the hay crop has been annually cut and removed for a long period, and this without effecting any perceptible deterioration in the crop, as we were assured. But it is undoubtedly better to secure the return of at least a part of what is taken from them by pasturage, and this is done to as great an extent as other farm operations will admit. The long established practice of the best farmers, here as elsewhere, has been to feed their hay on their own farms; but of late years more or less has been generally sold, the land having reached a degree of fertility enabling it to be spared without sensible loss.

Steers which come from the West are bought during autumn for winter feeding, and sold after grazing to as late a period in summer as may be necessary to fit them for the butcher. Sheep are also fed in considerable numbers—ewes being generally purchased and lambs raised, and the whole sold off before new lots are taken in. Something has been done, we may remark parenthetically, in the line of improvement, by the use of Long Wool or South-Down rams in raising lambs, but not so much as one would have supposed from the facilities generally possessed for the purpose; and, as to cattle, so few are raised that there has not perhaps been very great inducement for the introduction of improved breeds. Still the value of Short Horn crosses is recognized in the selection of steers for feeding, and, as there is considerable Butter made, inquiry is beginning to show itself as to the best Dairy breeds.

Before going on to speak of the rotation employed, we may derive from the Census returns of 1860, an outline of the productions of the region under consideration. Of the townships over which our tour extended, Southampton is the one which reaches farthest into the territory of the pines and cedars, the sands and swamps. New Hanover, also, has quite an area of the same kind; but throughout the others the proportion of unimproved land is very small. Thus the census reports—

Township.	Acres Improved.	Acres Unimproved.	Total.
Chesterfield, ...	11,728	1,281	13,009
Mansfield, ...	17,301	930	18,231
Springfield, ...	15,982	906	16,888
Northampton, ...	585	13	598
	45,596	3,130	48,726

These four townships have therefore but little more than 6 per cent. of unimproved land out of nearly 50,000 acres. The chief crops reported for 1859 on this area were:

Wheat, bushels, ...	55,997	Oats, bushels.....	106,148
Rye, bushels, ...	34,618	Hay, tons, ...	14,621
Corn, bushels, ...	269,758	Butter, pounds,.....	196,992

The numbers of live stock are reported for the above four towns as follows:

Horses,.....	1,668	Milch Cows,.....	4,195
Asses and Mules,.....	171	All other Cattle, ...	2,219
Swine,... 12,412		Sheep,.....	8,933

This does not necessarily show a preponderance of butter-making over the feeding of steers, as many of the Milch cows are kept for the purpose of fattening veal calves.

The "" sheep should, but may not, include lambs. The number of swine shows that considerable attention has been paid to pork-making,* but under the competition of the West, this branch of husbandry is not thriving so well at present.

The census statistics prove the correctness of Mr. NEWBOLD's opinion that Wheat, as a winter grain, is gaining on rye, in the extent sown. When the country was first opened it was cropped to corn, fallow and wheat, corn, fallow and wheat, year after year, unless indeed the interposition of the fallow even may not in some cases have been omitted. Thus the best land, without care in either of the three directions above specified, was rapidly worn down; the meadows suffered similar ill-treatment by continuous hay cuttings, and the whole district has not yet recovered from the consequences of this usage. With the progress of better management, hinging mainly perhaps upon the opening of the marl beds and the use of lime, soils which were too far gone for the remunerative growth of wheat, and on which rye had consequently become the chief crop, were again sown to the former grain, and this has since been gaining from year to year, until now, as above shown, the surface under wheat is again considerably in the ascendant.

Rotation of Crops, etc.---Our Tour.

On the farm of Mr. Watson Newbold, where, as already stated, great improvement has been effected during the 33 years since it came into his posession, the rotation now employed is as follows: The first year, Indian corn; the second year, about one third in potatoes, one-third in oats, and the remainder in an early variety of Indian corn; the third year, wheat or rye; the fourth year, clover. Having so large a proportion of permanent grass land, mainly natural meadow, the clover sod is turned over the following year, and Indian corn begins the rotation once more. Many farmers, where the surface of permanent grass is small in proportion to the upland, simply take two crops of Indian corn, after breaking up; follow them with two years in small grains, and then seed down for two or three years in grass. One year in bare fallow, as practiced 40 or 50 years ago, has been almost or entirely abandoned.

We visited the fine farm of MICHAEL E. NEWBOLD, Esq., June 10th, but as he was not at home had no opportunity of inquiring into his system of management. This farm consists of 350 to 400 acres—with a beautiful residence enjoying a wide view from the ridge of land on which it stands. Our next call was at ALEXANDER NEWBOLD'S, whose rotation is to turn over the sod for corn, then oats, wheat and grass. This farm was among those affording the highest evidences of improvement and fertility; a field of Kentucky white wheat, of 15 acres, was one of the very best we saw during the whole journey—drilled in, as usual with Mr. N., and good for 30 bushels per acre at harvest we hope and believe. Mr. N. has about 190 acres of land; he has been a very neat and thorough-going manager, and has underdrained largely. The stock on the farm was about 30 head of cattle, 40 breeding ewes, 35 swine, and 10 horses and mules.

The next stop we made was at "Fountain Green," the residence of Hon. Jos. K. HULME—an upland farm of 225 acres, which we had partly in mind, in speaking of some of the land in this part of Burlington county, which had been once worn out under an exhausting system of Wheat culture. Drainage, marling and liming, and farm-yard manure have worked wonderful changes since it has been in his hands. His present garden up to a very recent date was a mere bog hole; it is now the picture of fertility, while the grass fields bear witness to results not less gratifying, and the springs which formerly rendered them almost useless are collected and made to pump themselves up to the house and yards by a simple and compactly arranged water wheel, affording a constant and most abundant supply. The buildings on the farm are capacious and well arranged—the swine pens and poultry house perhaps especially so—the latter we were told affording an income of $300 to $400, besides supplying from three to five tons annually of a *guano* which Judge H. prefers to the imported article, and considers the most valuable manure of the farm. Lime and marl are entitled to much credit for the productiveness now attained; and the enterprise which has been manifested in the work of bringing up the land, and the liberality and perseverance which characterize Judge Hulme's efforts, afford an example which cannot be lost upon the agriculture of the whole neighborhood.

Fountain Green is a mile or two south of Wrightstown, and from there we proceeded to the farm of Mr. GILBERT LAWRIE, where we made but a brief call. His rotation is Indian corn, winter wheat, and grass for three years. His steers were grazing a field of fine timothy, which he thought excellent for pasturage, notwithstanding the general preference given to the natural grasses.

Our "nooning" was at "Cloverdale," the farm of Messrs. CLEAYTON and WALTER NEWBOLD, father and son—comprising about 300 acres in one body, with the advantage of one-half its area in natural meadow, and about 30 acres more of outlying meadow, which we subsequently visited. This farm included 30 to 40 acres of corn, about 15 each of rye and wheat, and had wintered a hundred head of horses, mules and cattle—the latter, to the number of 70, being a prime lot in every sense of the word, and just ready for market. For natural advantages, combined with careful management and high condition, this farm must rank second to none in its neighborhood.

The evening we had the pleasure of spending at "Locust Grove," the residence of Mr. JOHN BLACK, to whose experience we have already referred, and whose ancestors have occupied this same place since the year 1682. It is now about 300 acres in extent, and the grass in its extensive meadows vies with anything we have ever seen in the way of pasturage. Much draining has been done here, as well as at "Cloverdale." On the upland there are great variations in the character of the soil. On the lowland we saw a bed of the bog iron stone heretofore alluded to. The water appears to be so strongly impregnated with iron, as to impart the character of an ore to what it saturates for a sufficient length of time; at least we know of no other way in which to account for the fact mentioned by Mr. Black, that excavations from which the stone has been taken, are found after a series of years filled up by a slow process with a new formation of the same kind. Lime, marl, salt and plaster have all been largely used by Mr. B. The last named he finds of no effect on the lowland. In conversation the subject of *changing pastures* came up, and it was thought the general and best way to give the whole range of land to the cattle at once, and keep them

* An interesting letter from WATSON NEWBOLD on this subject will be found in the CO. GENT., vol. xvii, p. 172, and in CULTIVATOR, April 861, p. 122.

there till ready to leave it, instead of alternating from field to field as some advise.

The next morning, Messrs. Watson and Walter Newbold and the writer again had an early start, and the first pause was that at Gaskell's Marl Beds, described already. After a farther drive of some distance we called at the farm of Messrs. J. & S. Butterworth, where over fifty large sized steers were grazing—among them a fat ox of extraordinary size, probably five years old, and destined rival the Sanderson ox, if it goes on increasing in weight for a year or two longer. The arrangement of the barn for winter feeding which we observed here is one adopted by many farmers, and appears to possess several advantages. A broad passage way occupies the center of the barn floor, through which the hay wagons drive with their loads. The use of a horse fork lessens the labor of stowing the hay in the loft above; by beginning to unload at the farther end from entering, the space directly over the passage way is also filled, on poles laid across at such a height as to allow the ready passage of the empty wagon under them, although not high enough to admit it when loaded. On each side of the passage way, and facing it, are stalls for the steers, with a manger extended along in front, divided off into lengths corresponding with every two stalls. This is done, instead of separating the mangers for every stall, in order to admit long cornstalks without cutting or bending them; and grain or meal may be put either into a loose box placed in the manger, or into one end of it partitioned off for the purpose—the former being sometimes preferred on account of the facility with which the animal can *nose* it around and get at all its contents. What we thought the best feature in the arrangement, however, remains to be told: the stalls are entirely separated from each other, so that the animal requires no tying, and in fact has all the advantages of the box arrangement, except that it is too narrow to admit of turning; and every stall has a slatted door behind it leading into the yards. These doors afford abundant ventilation, and are protected by a projecting roof running along just above them, which prevents storms from driving in. Thus the animal has nothing to interfere with his enjoying himself as he likes, and has a plenty of fresh air—a point too often neglected—while the litter and manure are easily removed.

We next proceeded to Mt. Holly, passing the large and excellent farm of Mr. John Black, Jr., of between four and five hundred acres, where we had not time to stop. Near Mt. Holly we called at the farm of Charles Bispham, Esq., where 60 cows are kept, from one-half of which butter is made, and 40 calves fed from the remainder. This farm contains about 300 acres, and has this year perhaps the largest field of Indian corn in the county, being about 60 acres in one enclosure. This is only a temporary arrangement, however. Mr. B., in connection with Mr. Samuel A. Dobbins, who has charge of the farm here, is also engaged in the improvement of a tract of about 2,400 acres of new land a few miles to the east, which they are rapidly bringing under cultivation, meeting with a degree of success perhaps beyond the anticipations they had ventured to form, in the returns obtained as compared with the original cost of the land, which we understood to have been about $5 an acre, and the expenses attendant upon clearing and breaking it up. Both these gentlemen are doing much to farther the Agricultural interests of the county, and their efforts are appreciated by those who see them. Mr. Bispham having acquired a large fortune as a merchant here and abroad, with rare liberality and judgment, invests a portion of it for the benefit of his fellow men as well as himself, and he could have no more practical and thoroughly qualified coadjutor in the task than Mr. Dobbins, whose management must be an example and incentive for those around him.

In Mt. Holly we called at the spacious residence of Wardwell Brown, Esq., whose garden, fruit grounds, and graperies display the results of much devotion to horticulture, and are an ornament to the place.

Leaving Mt. Holly, and passing the well enclosed grounds of the Burlington County Agricultural Society, of the prosperity of which we were pleased to find so good evidence—our drive next carried us along the Burlington road, until, within a short distance of that place, we turned off upon an admirable private road, toward the farms of Messrs. Geo. D. Parish, Edw. G. James and Thomas Richardson. The farm of Messrs. James and Richardson, "Green Hill," has still standing upon it the mansion erected in 1680 or 1690, by Samuel Jennings, one of the early governors of New-Jersey. On this farm as well as on that adjoining, occupied by Mr. Parish, very great improvements have been carried on in draining, &c. In improved stock, these gentlemen have some fine specimens, including Alderney cattle and a few Short-Horns, Leicester sheep and Shetland ponies. A very capacious octagon barn is one of the chief features at Green Hill, having a yard all around it, and sheep-sheds, pig-pens, tool-rooms, an engine and engine-house, and other buildings, also arranged octagonally, and enclosing the yard. The plan of the barn within is such as to admit of an inner row of stalls facing the center, a wide passage way outside of them, and another row of stalls on the outside, with loose boxes and other apartments occupying a part of the space, and capacious storage for hay above. The liquid manures are carried off to cisterns on the outside, and every precaution is taken for the care and economy of all fertilizing materials. On this farm we saw a field of some sixty acres in potatoes, which are an important crop on the place, going mainly to supply the stores of foreign steamers and other vessels at New-York and Philadelphia.

"Oxmead," Mr. Parish's place, is reached from a very neat and tasteful entrance, where a lodge has been erected in admirable keeping with the character of the residence—a substantial building of the olden time, which, with a reverence for age and a sense of fitness, if we may call it so, too uncommon in this country,—has been enlarged and adapted to the requirements of the owner, without any attempt to give it a character and expression foreign to the original design. It thus combines modern conveniences with the marks of venerated years—wide, deep fire-places in which grand old logs may have lit up the hospitalities of half-a-century, and heavy walls and beams probably good for many a half-century to come. It is a pity that such time-honored mansions should be so often torn away, with all their associations and mementoes, to make room for structures of doubtful taste, whose greater pretensions are often too flimsy to bear the weight of years—and perhaps still more a pity when improvements are so inappropriate or incomplete as to render the whole an uncomfortable hybrid between a past of which the "improver" is ashamed and a present of which he has no reason to be proud.

The barn at Oxmead is of brick, and wide, deep and high enough to render its capacity very great. The care

taken to secure ventilation is worthy of especial notice; the lower part of the wall is double, admitting air along each side of the stables by entrances at the end, and conveying the impure air through flues which pass out under the roof. An observatory on the top commands a wide and beautiful view in nearly every direction. A large tank receives the water pumped up from springs at some distance by a water wheel, and from this reservoir all the buildings are supplied.

Approaching rain and evening interrupted our visit, and we returned to Crescent Farm after another busy and delightful day. When in the vicinity of Burlington, there are some other calls which if it had been possible, our programme would certainly have included—among them one at the nurseries of our friend GEORGE B. DEACON, who is among the oldest and most efficient of those to whose kind offices during ten years past the books of the COUNTRY GENTLEMAN bear witness.

Various other Notes and Items.

Before leaving Mr. NEWBOLD'S the next day, we had time to look about his farm and buildings more thoroughly. A simple feeding-box for hay in his cattle-yards, which for cheapness and durability he prefers to any other, is made of cedar poles perhaps five inches in diameter, three or four poles high, according to their size—these poles ten feet long, placed triangularly and pinned together by a half-inch iron rod passing perpendicularly through each of the three corners. The sheep feeding-rack which meets his wants most nearly, is constructed with corner posts 1½ by 2½ inches, 2 ft. 3 in. high,—the rack of any convenient length, 2 ft. 3 inches wide, with no bottom, boarded up on the sides and ends 15 inches from the ground, and the distance between the boarding and the top slatted up and down with "shingling lath," 1 by 2½ inches. The top slat, to which those on the sides and ends are nailed, is bored at the ends to fit on to a pin cut in the top of the corner posts, and a stay across the middle, and one at each end, just below the top slat, completes the whole. It answers well for hay, there being no tipping over or other cleansing necessary, but would not suit the requirements of those who desire something in which grain and meal or roots can be fed as well as hay.

Watering places in the fields are made by opening a sort of trough down to the depth of the drain, with nearly perpendicular ends, and sides receding two or three feet to every *one* of depth—the water from the drain entering at one end and the surplus going out at the other, into the continuation of the drain. The sloping sides and bottom of the trough are of cedar poles secured in place, and preventing the treading up of the ground. At the lower end, a simple arrangement by means of one or two tile set on end in the ground, connects with the drain below in such a way as to prevent the drawing in of either floating or sunken impediments, and a sink hole beneath the drain level may receive any sediment by which it would otherwise be clogged.

On some young trees in a pasture, in danger of being rubbed and gnawed into by cattle and sheep, Mr. N. had tried driving nails at intervals into each side of their trunks, leaving half an inch or so of the head projecting, and smearing the trunk beside with gas tar. He thought this cheaper and as effective, as an enclosure of boards or rail, but feared that his descendants or successors might have some difficulty in sawing and splitting the timber in future years.

The last morning we also called upon Mr. JOHN BISHOP a neighbor of Mr. Newbold's, and where we could overlook an expanse of meadow land nearly a mile and a half in width, with some narrow intervening points of low upland. The creek here runs westerly (the Assiscunk, we believe) toward Burlington, and the meadows extend for some distance above and below, but diminish in width and fertility after going a few miles farther down the stream. Mr. Bishop's farm includes 400 acres, about one-half upland, and nearly fifty in wood. He has this year 35 acres in wheat, as many more in Indian corn, and 14 in oats, is feeding 90 to 100 cattle, and about 50 ewes. One field of wheat on Mr. B.'s farm was simply harrowed or cultivated in, we understood, last autumn among the corn, and the rows which had been occupied by the stooks were now vacant. The remainder of the field was covered with a promising growth, and a fair yield would probably result.

Mr. Newbold's oat and potato fields, which we looked at on the way to Mr. Bishop's, were promising remarkably well. Potatoes Mr. N. plants in hills 3 by 2⅓ feet, two pieces in the hill with two eyes cut to a piece—covered by the plow, and the ridges thus left, which are too high, scraped off and levelled with a piece of timber long enough to reach over three ridges at once—say seven feet—fitted out with handles like those of a plow, and drawn by a chain attached on the same side of the timber as the handles and passing over it to connect with the whiffletree of the team. This is found to work better than where the chain draws from the front of the timber, since by drawing from behind there is a constant pull to tip the handles forward, and leaning upon them to overcome this draught, is just what is wanted to do the scraping well. The oat crop on Mr. N.'s farm has for several years averaged not less than 50 bushels, weighing from 33 to 36 pounds per bushel.

As an example of the fact that considerable fine poultry is reared for market in this part of Burlington county, Mr. Walter Newbold mentioned a case of which he had lately been made cognizant, in which eighty-five fat capons were sold for $200—twenty of them averaging 10 lbs. each as dressed for market, and bringing 30 cents per lb. The actual amount for which these 20 sold, was sixty-one dollars and some cents.

Fruit of various kinds receives a due share of attention. Prof. COOK'S Report alludes to a remarkably good strawberry patch which took the prize of the Burlington Co. Ag. Society in 1855, "for the most profitably cultivated crop in the county." It was returned as yielding "at the rate of twelve hundred and twenty-two dollars an acre, clear profit." Two or three acres at this rate every year, would suffice to place quite a family above the fear of immediate indigence.

On the drive to take the train at Bordentown, we passed several farms illustrating either the natural advantages of location or the careful management of their owners. Among them were those of Messrs. JOSEPH DE CAMP, JAS. DECON, JOHN and JOSEPH TROTH. The last two are examples of the kind referred to in our general remarks at beginning—farms not originally so rich as to rank among the best, but nevertheless brought to a high state of cultivation and productiveness from the skill which has been shown by their owners. Mr. JOSEPH TROTH, whose farm we should have paused to examine more carefully if time had not hurried us away, is about

to open a seed store in Bordentown, where his experience as a farmer will come in play to great advantage.

The subject of feeding calves for veal, as already intimated, is one to which much attention is here paid. We should be glad to receive from Mr. NEWBOLD a full account of the system of feeding most successfully adopted.

In drawing these notes to a conclusion, we can scarcely speak too highly of the general appearance of neatness and comfort apparent throughout the whole extent of the tour. The farms visited were necessarily few in comparison to the number possessing claims for scrutiny and commendation; they were selected as on the whole illustrating most completely the character of the Agriculture of the county, and the degree of perfection to which it is carried. The size of farms generally is not so great as those we have described, the larger number being of two hundred, one hundred and fifty, or a hundred acres, with some yet smaller. But nearly all are very well and substantially enclosed, and the fence corners clean of weeds and bushes, while the same holds true of the fields, as a general rule—the cultivation being such as to compare favorably with any other part of the country we have ever visited. The general style of fencing, we should add, is with white cedar rails, with erect stakes or posts, giving it a more tidy look, and occupying less space than the Virginia fence as commonly put up with stakes set obliquely. Some of the rails in fences near Mr. Newbold's, he assured us, had been in use from one hundred to a hundred and fifty years, and instances are not rare of fences in good preservation which have stood with repairs from time to time, for thirty, forty, or fifty years. The farm-houses are on a scale commensurate with the prosperity and culture of the farms, and the out-buildings are capacious and substantial. Everything wears an air of contented thrift, and evidences abound that one is in a reading and thinking community. The good course of improvement that has been begun and already borne fruits so encouraging, we cannot but think destined to continue; and if Providence should permit us the pleasure, ten years hence, of another such trip under Friend Newbold's guidance, we shall expect to hear farther accounts of pastures feeding yet larger herds of cattle, and reapers garnering in yet heavier crops of grain. With such advantages both for the purchase of fertilizers and the marketing of crops,—with such climate and soil, we see no reason why the agriculture of this part of New-Jersey should be second to that of any other State or country. L. H. T.

Some points in the preceding articles receive additional elucidation in a letter from Watson Newbold which reaches us during the preparation of the present number. Thus he says on the subject of

DEPTH OF DRAINS.—"By putting the bottom of the drains 2 or 3 or 4 inches below the bottom of the vein of springs, so that the water will have a fall into the tile, they will more effectually do their duty, than where the tile be laid on the top of the spring. The general depth is probably some 3 feet, but as a consequence, must vary from 2 feet to 4 feet, according to the depth of the under ground veins of water, (which exist where drains are essential) and in some cases they are made deeper, for short intervals, as required either to cut certain veins of water, or to acquire the requisite fall to an outlet. The only universal rule I know of as to the depth of drains, is to endeavor to get down below the water veins, and then open below the outlet of the tile drains, though this latter is sometimes very difficult to accomplish. Neither can the distances apart be designated, except as the occasion exists. In most cases, none at all are requisite, or of adequate advantage, while in some other cases, the situation requires them pretty closely, though in most cases a single leader with more or less branches, is enough. These are laid with small size tile at the head of the drains, and the size increased one or two sizes, as the drain seems to require it, remembering that after running a few weeks they generally discharge *much less* water than at first, from the fact of the steady draining, day and night, having lowered the supply."

OPENING AND FILLING THE DRAINS.—"When the soil is adapted to it, and not too soft in the bottom for one of the horses to walk, and the width and depth of drain admit of it, two rounds of the plow may be made in opening the drain, but in this case shoveling up after each of the later furrows is necessary, as there is not sufficient width of ditch to hold both furrows at once. But if there be a *subsoil* plow at hand, that is preferable for this third round (that being the only value of such a plow moreover, in my opinion, after several trials of it.) The remainder of the ditch is made with the usual tools, using for the last spit a spade, and observing that in finishing off the bottom, more especially where it is of but slight descent or soft bottom, that the man should be provided with a very narrow and shovel-handled and thin bladed spade of *hard, fine metal*, which will enter the ground easier, and let the clay or mud *slip off* of it the better, much to the relief of the operator in sticky bottoms. He will then face down stream and work up, shoveling this last time an inch or two in depth from him, and every one, two or three shoves on the bottom; then stroke the loose crumbs up to him, and so let there be no footstep on the bottom after finishing. Then lay the tile generally from the top end, walking carefully on them; after which coarse litter is put on pretty freely, more especially where the soil is loose, and this is settled by a coat of dirt—carefully walking on it to press the two sides—and then more dirt, after which the final covering, in cases where no sod exists, may sometimes be expedited by a plow, but not always. When a plow is used the dirt should be thrown out uniformly alike on each side, and also uniformly filled in on the tile before using the plow. A hoe made of an old shovel or spade blade, with a short handle set at a proper angle, and with an enlargement at the end to prevent the hand from drawing off, is a good tool to draw the banks in with. As to the use of *round tile*, I not unfrequently meet with a hard subsoil where I think it would be troublesome to cut out the hollow in the bottom of the drain, necessary to keep them exactly in place. I have used a few octagonal tile which I should think preferable to the round on account of this difficulty."

USE OF LIME.—"The experiment referred to, of a trial of lime on meadow land, was made nearly 20 years ago. One strip showed no benefit from the application, although on most parts of the field the effects were very apparent. The part not benefitted was a naturally rich alluvial soil."

THE USE OF MARL.—"In some localities, and on some lands, it has answered well to renew the application, and in some instances several times; while in others the same marl had very little effect after the first application, and in some places it has produced no beneficial effects, even at the first. Some 15 years ago I spread a load of good marl on a meadow in grass in December, and another load beside it in February next, and another beside that in the December next. The effect of the first was very great; of the second, about half as much, and of the third about as the second. This trial was made after having observed that marl had not acted uniformly when spread at different times on similar soils on my own and neighbor's land. There seems to be something dependent in a measure on the different action of the elements at different times upon the marl, which is not, and never has been, understood; and in cases where there is a small admixture of the green granules of marl all through the native soil, as can be plainly seen by washing a handful thereof, even there the marl laying underneath it acts with as much or more benefit than in other places, and I think that marl as well as lime, should only be extensively and repeatedly used after actual trial in different places, as much has been lost by

injudicious applications. There are many other marl beds in this county and some others adjoining, mostly to the eastward and southward, and many of them of excellent quality."

THE MANURES OF THE FARM YARD.—"These are, after all, the best and most reliable of fertilizers and the farmer's most sure dependance. More or less raw manure is drawn out early in the spring and spread broadcast before plowing for corn, and in some instances, more especially on the northeastern borders of this county and that of Monmouth adjoining, the practice has prevailed of late years, to some extent, to draw out the barnyard manure in the more leisure month of August, and spread it on the grass sod where it is intended to plow the ensuing spring for corn; and wasteful as this practice may appear to be by some, yet the number so doing is increasing under their conviction, founded upon experience, that by it they derive the greatest benefit. On visiting the farm of an old experienced and successful agriculturist of this county, some 30 years ago, I inquired of him the best time to apply barnyard manures, to which I received the significant reply: '*When you have got them*—the main thing is to have plenty of them, and be sure to put it *all* on the land as soon as you can well do so.'"

RE-SEEDING THE MEADOWS.—"After breaking up meadow land to level inequalities of the surface, and taking a crop or two, it receives a good liming, and is sown with herds grass and timothy seed, (but no grain,) and where not too low, with clover in the spring following, so to remain thenceforth, without even again plowing, but occasionally top dressing spots that may need it."

Sheep Farming in Illinois.

I want to tell you how one of my neighbors, Mr. CHAMBERLIN, has wintered about seven hundred sheep the past winter, and the success he has had with his lambs. The winter, as you know, was an open one, almost without a precedent since the settlement of this region. He commenced feeding them corn as soon as they needed it, commencing moderately until he fed as high as eleven bushels per day, usually feeding as soon as let out in the morning. He managed to get the range of farms in the neighborhood which had not stock sufficient to use up the after growth on pasture, meadow and stubble fields. In this way I think he has kept them out so that he has not fed them to exceed a month on hay, all put together.

It is thought by many, that corn-fed ewes are apt to drop weak lambs, but in this case at least it does not seem to have produced this result. His lambs began to drop the first part of April, and when he had 228, he had lost but one, and he says that one was dead when dropped. I think this is in advance of anything in lamb raising I have any recollection of. A. MOSS. *Boone Co., Ill., June* 1.

HOW TO MAKE CLOVER HAY.

EDS. CO. GENT.—To your truly valuable article on haymaking of 26th of June, allow me to add a little as the reresult of my experience. Clover should never be cut when wet either by dew or rain. My practice usually is to start the mower, say at 2 or 3 o'clock P. M., and cut until the dew falls.

If the sun is very scorching, I begin later in the day. This is put into cock the next day, sometimes before noon, but oftener later, depending upon the weather and thickness of the grass, but always before the leaves get *crispy*. Sometimes I commence cutting as soon as the dew is off in the morning, and get it up the same day.

If the dew or rain falls upon clover while it is *green*, little or no injury results from it if fair weather follows soon; but after clover is considerably dried, rain or dew cannot fall upon it without serious injury to the quality of the hay. P. P. B. *Batavia, June* 25, 1863.

Good Steers---Improvement of Cattle.

MESSRS. EDITORS—On the 17th ult. I sold the pair of two-year old fat cattle I formerly wrote you about, for one hundred and seventy dollars and ten cents. One was 25 months and two days old the day he went away; the other 25 months and 10 days. They consumed $53.50 worth of grain, including oil meal, from calves until they went away. The account would stand thus:

Cash received.....	$170.10
To oil meal, corn, &c..	53.50
Leaving, for keep, say milk, pasture and fodder.....	$116.60

One got no new milk. There was only five pounds difference in weight when they left me.

I am aware that there are many thousands of cattle in the State of same age, that are worth only from $10 to $14 each. It does appear to me that if farmers would cross their stock with Durham bulls of the best breed, they would realize a handsome profit by so doing, and feed better at the same time. I counted the grain my steers consumed at the highest market price, and the oil-cake meal at the price it cost. There are many pure bred Durham bulls in this State now for sale. James O. Sheldon, Esq., near Geneva, has as good bred Durhams as probably can be found in any country. The Hon. Wm. Kelly of Rhinebeck, has also a very good herd; also Samuel Thorne, Esq. of Dutchess, I understand has a large herd of choice Durhams, and many others have very good ones. There is plenty of that stock now to improve the breed of our cattle immensely, and by a few farmers buying a pure bred bull in different neighborhoods, the stock would soon be improved. But good cattle can never be made from straw in winter and poor pastures in summer; and then the manure made from well-fed cattle is surely worth four times as much as that made from straw only. JOHN JOHNSTON. *Near Geneva, June* 16.

MARES IN FOAL AND NEAR FOALING.

A somewhat singular exhibition of natural instinct in the case of a mare in foal having come under our observation, we have thought that it might serve a good purpose to put it upon record, together with some remarks as to what common sense seems to dictate as to the treatment of mares when near the time of foaling.

A neighbor was plowing, near to where we were at work, a field which had never been effectually cleared of the stumps of large white oak and hickory grubs. The piece had been grubbed by job-work, and grubs which should have been taken out by the roots, had been cut off merely at or near the surface, so that the man plowing could not see or shun them. Of course, every now and then the plow would strike one, and either severely jerk or stop the team. One of the team was a mare not very far from her time of foaling, and whenever the plow was caught by a grub, she would turn partly around and look at the driver, as if she would have liked to tell him that that was not proper work for her. Finally, after showing more and more her reluctance to start again, she refused absolutely to draw at all. She had never shown any disposition to be balky during a service of seven years; and at our suggestion that the mare instinctively knew that the jerking was injuring her or her colt, she was released from attempts to force her to continue the work.

Upon this occasion we have said once, thought oftener, that if mares had tongues to speak, they would complain of *mis-treatment* whenever the work they were put to was of a similar jerking nature, or when made to trot quick upon a rough road, or to plow headlands or stiff soils, or to harrow land so rough and uneven as to jar them by the dipping of their feet or the inequality of the draught. For several weeks before foaling, mares should not do any work which shakes, jars or jerks them, and should be gently treated. A.

Cheese Factories and Dairy Farms.

The 24th, 25th and 26th of June were spent by the writer among the Dairies of Oneida and Herkimer counties. The subject of Cheese making was investigated quite fully in the company of some of the best and oldest dairy farmers in that admirable dairying district—a large number of experienced witnesses having been questioned and cross-questioned on the stand, or rather by the side, of their own cheese vats and presses, and their testimony being most amply and vividly illustrated in the contents of these vats and presses, and along the well filled shelves of their curing rooms. We should therefore tender our acknowledgments for the many attentions received during the trip, not less than for the readiness with which every facility for acquiring information was cheerfully granted. Nothing could afford clearer evidence of the confidence reposed by the makers of cheese in these two counties, in the superiority of the product obtained and the demand in which it is held, than the obliging disposition they manifest to communicate to any and every inquirer, the fullest details reached in their extensive practice. This liberality is both gratifying and instructive.

As something of an interval may elapse before the publication of our notes on the Cheese Dairies—the present design being to prepare an article embracing them, for the forthcoming number of the ANNUAL REGISTER OF RURAL AFFAIRS (for 1864,) we give below a very brief outline of the journey. It may be preceded by the remark that the present season has been unusually favorable in the localities visited. The grass is excellent—the weather having been cool with quite frequent showers; and the grain sown, although limited in area of course, where dairying is the main object of the land, is uniformly looking well and sufficiently advanced, except perhaps the Indian corn, and this is not as backward as in some localities. A good crop of Cheese may consequently be expected, but we doubt the correctness of the anticipations entertained by some, as to an *immense* increase in the quantity made. There has been some increase attendant upon the high prices commanded of late, and the product will doubtless be considerably larger than heretofore. But, so far at least as Oneida and Herkimer are concerned, the product of several years past has been very heavy, and there was scarcely room, if there had been the disposition, to multiply it to such an extent as to create any surplus on the market.

Our first visit was at the farm of Mr. JOHN G. WEBB, near Utica, who is not a cheese farmer, disposing of his milk daily in the city. He has a dairy of 60 cows, and is soiling them to a great extent—a practice which works so well in his hands that he will ultimately make it his sole dependence, we understood, even more completely than at present—[See his article on this subject, Co. GENT., vol. XX, p. 235, Oct. 9, 1862.] Mr. WEBB'S farm consists of about 240 acres, the principal part of which is now occupied as follows:

	Acres.		Acres.
Meadow for Hay,	100	Barley,	18
do. for Soiling,	20	Oats,	18
Pasture,	25	Potatoes,	18
Fodder Corn,	12	Ruta Bagas,	2

Mr. Webb's intention hereafter is to sow rye for early soiling, after which the clover will be in season, followed by Indian corn sown for fodder, as described in the article above referred to, thus supplying green food the season through. In answer to the question as to his experience in the average daily yield of milk, Mr. W. said he thought if his cows averaged 7 quarts each per day for from nine to ten months in the year, they were doing well, and that this was probably above the ordinary yield.

With Mr. Webb—to whom we owe the first idea of the journey, by the way, as well as a large part of the pleasure and information obtained, we next called upon our old friend Rev. C. E. GOODRICH, who has done so much for many years past in the production of new seedling Potatoes, and to whom we owe the Garnet Chili and various other valuable sorts daily growing in public favor. Mr. G. accompanied us to the grounds of the State Lunatic Asylum. The superintendent and physician of the establishment, Dr. JOHN P. GRAY, deserves the highest credit for the condition of affairs both within doors and without, and we have never visited an institution of the kind, either in this country or abroad, combining so many desirable features—such perfect order, neatness and discipline, together with so many evidences of careful and judicious management throughout. We shall recur to this visit at an early opportunity, with some interesting facts which Dr. Gray has kindly furnished.

A passing call at the residence of SAMUEL CAMPBELL, Esq., of New-York Mills, added that gentleman to the party, now including also Dr. Gray and Mr. Webb, and we drove to the Cheese Factory recently erected in Whitesboro, and owned and carried on by Mr. GEO. WILLIAMS and Dr. L. L. WIGHT. The former of these gentlemen, with his father, has probably had more extended experience than any others, in this direction, and we were greatly interested in the processes we saw going on—full notes of which were taken. The number of farmers now sending their milk to this factory is 48—owning in the neighborhood of 650 cows—and the quantity of milk received at the factory the day before—June 23d—was 14,915 pounds, or about seven tons and a half.

We next returned to Mr. CAMPBELL'S, where we enjoyed a ramble over the fields among the Ayrshires, which form one of the leading herds of this breed in the United States, for their select character, although exceeded by some others in numbers. "Heather Bell," "White Lily," "Handsome Nell," the heifer "Tibbie," and others might be named as admirable examples of the best Ayrshire stock, but it seems almost invidious to select any for especial mention. Mr. C. has also a number of Short-Horns, although his fancy is rather for the Ayrshires—among them the young bull "Iron Duke," by Belmont out of Rosamond, an animal of remarkable size, and bearing a resemblance in some points to Duke of Gloster, the sire of Belmont. Only in good working order, and but little over three years old, he was weighed some time since and found to mark over 2,500 lbs., which illustrates better than anything else how large and solid he is. The sheep at Mr. Campbell's include some excellent Leicesters and a few of the Blackfaced Scotch Sheep imported some time ago by Mr. Brodie. We were much interested in going with Mr. C., through one of the three cotton mills of which he is a proprietor, and which render the "New-York Mills" muslins familiar to every purchaser of the best shirtings that are manufactured.

The next step in the programme was to have been a drive to two Cheese factories near Oriskany—one carried on by Mr. WILCOX, and receiving the milk of about 600 cows, and the other by Messrs. TANNER, WOOD & ASHLEY, to which the milk of some 900 cows is contributed. But the day was too far gone, and we regretted the necessity of omitting this part of the tour—taking the railroad, in-

stead, for Rome, with Messrs. WEBB and WILLIAMS, and reaching the farm of the latter gentleman, between four and five miles north of Rome, at quite a late hour in the evening.

Thursday was spent in visiting the Cheese Factory of Mr. F. B. SMITH in Delta; that of JACOB MILLER at Westernville, who manufactures Swiss cheese, a full account of which we hope to have for publication; the farm of the late HENRY WAGER, also in the town of Western, and the cheese factory of the Rome Cheese Manufacturing Association, JESSE WILLIAMS, Superintendent, and the Ridge Factory of Messrs. CROSBY & HUNTINGTON. That afternoon we returned eastward as far as Little Falls.

Here we were met by Messrs. WHITMAN and GREEN on the part of the Little Falls Farmers' Club, and in the evening visited the farm of the former gentleman on the heights across the river from the town. The next morning our first call with Mr. WHITMAN, was at the farm of X. A. WILLARD, and accompanied also by him, at those of Messrs. Elijah Stanton, in the township of Little Falls, Abram Keller, J. W. Windecker, Reuben Neely and W. S. Ford, in Fairfield, and Josiah Rice in Manheim. Our drive also carried us into the town of Salisbury. The afternoon was spent at a meeting of the Club, at which there was a full attendance, and a spirit of enterprise and discussion manifested, proving the usefulness of such an organization, not less than the interest and judicious management which have rendered this one of the most successful societies of the kind in the State. Our thanks are due to the Club not only for their efforts to render our visit an agreeable and useful one, but also for the appreciative attention with which the off-hand remarks forming a part of the "order of the day," were kindly listened to. In the twilight and moonlight of a charming evening, we had a delightful drive with Mr. ALONZO REED, into the township of Danube, which made the fifth town visited in Herkimer county alone, and where we saw, on the farm of Mr. R., one of the best dairies of cheese, and as many evidences of improvement, as in any part of the trip.

When we add to the foregoing hurried sketch of the extent of ground traversed, that our notes on many parts of it are quite long and full, it will be perceived that the budget in detail is far too heavy a one to be hastily unfolded. We have seen Cheese enough, made and making, to last many thousands of individuals, we should judge, for the remaining term of their natural lives. We have seen milk fresh from the cow, and milk just thickening at the first impulse from the rennet; the curd scalded and standing; the curd cut and stirred; the whey turning to the dim green which betokens the near completion of the task, drawn off to nether and unseen tanks, and finally draining from great sinks, in which at last the curd receives its modicum of salt and final handling; and, lastly, we have seen the cheese going into press and coming out of press; standing by the hundred to cure; on its way to market, and, now and then, samples cut for "tasters." In fine, if there is any stage in the inception or completion of this important product which has not been included among the sights of the journey, from the time the clover and timothy stand in the pasture, to that at which their condensed juices are boxed in rich, round discs and despatched to New-York and the ports beyond the Atlantic, we are not aware of the omission, and will take the trip again to rectify it. During three days of last week Little Falls alone committed to the tender mercies of the Central Railroad nearly 3,500 boxes of cheese weighing over *one hundred and thirty-two tons*, which sold for a fraction over $30,000 and was mostly paid for in cash. Let that statement close our story for the present. L. H. T.

VENTILATING HAY STACKS.

It is not every farmer who has barn-room for all the hay that he cuts, and must necessarily stack some of it out of doors. Newly made hay, when exposed to the weather in the stack, is more liable to injury from heating than that which is put into the barn. It also not unfrequently occurs that from threatened bad weather, or in order to secure hay which is cut near the close of the week, that it is put up before it is thoroughly cured. Injury from these causes may be entirely prevented by exercising a little care in ventilating the stack when it is put up. With this precaution, hay that is quite green will cure finely in the stack, and come out sweeter and better than that which is too much exposed to the sun in curing. Our practice has been, first, to lay a good foundation for the stack, of old rails or poles, laying two tiers, and crossing them; then to stand five or six others up in the centre, eight feet long, and two feet apart at the bottom, the ends coming together at the top. If these are allowed to extend to the top of the stack, they will be in the way of finishing off, as the stack diminishes. But in order to extend the opening to the top, when the ends of the poles are reached, a round smooth stick, prepared for the purpose and inserted between the ends of the rails at the top, and the stack built up, and as it rises the stick is drawn up, and when the stack is somewhat settled it is taken out entirely. A hole is bored through the end of the stick, and a rope or a wooden pin inserted to draw the stick up with. This centre piece may be six or eight inches in diameter; thus leaving an air passage from the bottom to the top of the stack. When the hay has passed through the sweating process, and all danger of moulding is passed, the opening at the top is closed with a cap of straw or hay. This precaution costs but little labor, and is many times compensated by the superior quality of the hay.

My Experience in the Use of Plaster.

MESSRS. EDITORS—Having been a constant reader of THE CULTIVATOR from its commencement, and received much benefit therefrom, I will give you some of my experience in regard to the use of plaster, having used it for about forty years. I agree with my friend J. F., that the best time to sow it is in May on grass lands. I have received great benefit from it on all kinds of grain and roots, especially potatoes. It has the most effect on land that never received any plaster.

I have two fields that have been highly manured, and have had crops on them for fifty years (and I don't know how much longer,) on which I have tried plaster on corn and other grains, and from which I never could perceive the least affect. Where I use plaster I leave a piece or row to see what benefit I may receive. I have left a square piece in the centre of a meadow; the next year I plowed and sowed it, and it was plain to be seen the second year.

I use tar and plaster on my seed corn. One man, unbeknown to me, planted one row in a field from an ear of corn; that row was plain to be seen all the season; it looked yellow, and did not yield as well as the rest. I let a man plant a field on shares. I told him he had better plaster it; he said it would do no good. After he had got through working it, I went unbeknown to him and plastered a few rows. When he cut up his corn he asked me if I knew what made these rows so much better than the rest? I told him it was the effects of plaster. My soil is gravelly loam. B. MILLER.

Schuyler County, N. Y.

EDITORIAL CORRESPONDENCE.

Croton Point Vineyard.

A day recently spent at these celebrated vineyards afforded a great deal of interest in connection with the culture of the grape.

Croton Point, as our readers well know, is nearly opposite Sing Sing, and extends about two miles into the North River, at its widest portion, dividing Tappan from Haverstraw Bay. It contains several hundred acres. The extreme point is occupied by the renowned vineyards of Dr. R. T. UNDERHILL, which contain about 50 acres. Adjacent to these are the vineyards and other grounds of his brother, W. A. Underhill. Both are very successful cultivators of the grape.

Stopping at Croton Station, a private drive of two miles over a carriage road of great variety and beauty, occasionally through dense woods, under old twisted oaks mingled with natural shrubbery and wild flowers—now sweeping for half a mile over a smooth plain, and then descending to the beach of the broad bay under a long avenue of trees, and through vineyards, orchards, gardens and pleasure grounds—we reach Dr. Underhill's fine Italian mansion. It is certainly one of the most beautiful and picturesque residences in the county, being washed by the waves of the river on three sides, where it spreads out to several miles in breadth. The Point is about 50 feet above the water, and its sloping sides are covered with the wildest natural growth, and are traversed by winding walks and carriage drives. This locality, surrounded as it is by open water, is remarkably favorable to the growth of fruit. Both the Isabella and Catawba grape ripen here; the latter about three weeks later than the former. The vines are trained on wire trellis, about eight feet high, supported mostly by chestnut posts, but some by locust. Since timber has become costly, the posts are placed about twenty feet apart; and the vines being about ten feet apart in the row, two occupy the spaces between the posts. Three wires are used, the upper being eight feet high, and the other two not two and a half feet apart, leaving a space of three feet next the ground.

This space is considered essential to the proper circulation of the air. A less height for the trellis was found to cramp unnaturally the growth of the Isabella vine; and by raising the trellis from six to nine feet, the product of the vines was doubled. A light stool ladder is used for gathering the upper branches.

The mode of training—the result of many years experience—is exhibited in the annexed sketch. The two upright branches of the vine are permanent, and remain as long as the vine lasts, unless accident or injury should require the removal and renewal of one of them. A horizontal cane is trained along said wire and is commonly

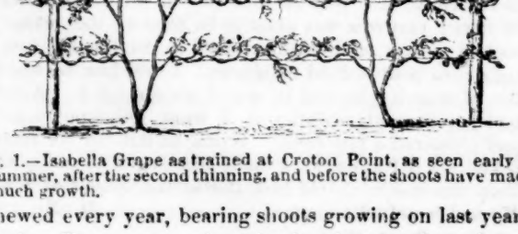


Fig. 1.—Isabella Grape as trained at Croton Point, as seen early in summer, after the second thinning, and before the shoots have made much growth.

renewed every year, bearing shoots growing on last year's wood. These canes furnish the fruit-bearing shoots, which are commonly thinned out, so as to be from ten to fifteen inches apart. They are allowed to grow their full length, without being stopped, unless it be the first of autumn, and commonly attain a length of some three or four feet. The weight of the fruit ultimately gives them a drooping position. The space between the rows, or trellises is commonly eight feet; on rich land a greater width is required and on a poor soil less will answer. W. A. Underhill informed me that a fertile soil is by no means desirable, causing too great a growth of the vine, less productiveness, fruit inferior in flavor, and a greater liability to winter-killing; while more room than is profitable must be given to the vines. He would never plant a vineyard on land that would produce more than fifty bushels of corn per acre and less would be better. He has some good vineyards on soil that would produce only about twenty bushels per acre. Nearly all the soil here is quite light, being primitive sand and gravel—he thinks on the strong rich soil of Western New-York the trellises should be at least twelve feet apart. The warmth of his soil may be judged by the fact that last year he raised seventy bushels of sweet potatoes, and that some years ago he loaded twenty sloops with water-melons from thirty acres. Both he and the Dr. have found little or no advantage in deep sub-soiling, the increased growth being rather a detriment. The great requisite appears to be to keep the soil constantly stirred and mellow by passing the harrow or cultivator through, after every considerable rain.

Dr. Underhill informed me that his routine of work had been about as follows:—His men commenced trimming soon after the middle of winter, and continued, as the weather admitted, until the frost was out of the ground in the spring. The spaces between the trellises can then be plowed, throwing the earth towards the centre and away from the vines, and running the plow rather shallower as it approaches them—although tearing the roots slightly is considered no disadvantage. Plowing the earth away from the vines is regarded as favorable to the admission of the warm rays of the sun. He showed me a vineyard, planted on sloping wet ground, which did not succeed well; but placing a tile drain three feet deep, midway between the trellises, has made it an excellent vineyard.

Some of the vines in these vineyards are thirty years old, and are three or four inches in diameter. They improve in value with age, or at least they have done so up to the present time. The new varieties have not been much tried, nothing having yet been found that will certainly supersede the Isabella and Catawba. The Concord ripens here no earlier than the Isabella, and the Diana hardly so early. It is not improbable that the age of these Isabella vines, and the consequent moderate growth and productiveness, may give them an advantage in this respect over younger and thriftier plants.

Dr. Underhill has a fine grape avenue over one of his carriage roads, made by erecting posts sixteen feet long or twelve feet above ground, and sixteen feet apart. Wires are stretched across from the tips of these posts, and support horizontal vines. On one side a vine is planted at the foot of each post; on the other, a branch at each post is brought from the adjacent common trellis. The annexed cut, exhibiting a single pair of these posts serves imperfectly to represent the appearance of this avenue. Where the ground is rather rich it is found useful thus to give the adjacent vines a chance to extend

Fig. 2.—Grapes trained in an avenue over a carriageway approaching the residence of Dr. Underhill, at Croton Point.

themselves; and W. A. Underhill showed me where he had in a similar way extended the vines over the strip of land on which the horses turned in cultivating it. The grapes thus obtained over this otherwise vacant piece of land, amounted to sixty dollars in a season.

I should have remarked, when speaking of the mode of training adopted here, that the horizontal mode is believed to be by far the best, and favoring great productiveness in connection with moderate growth. As the soil is never uniform over a whole field, and plants differ in vigor, some discretion must always be exercised in training and thinning. If the shoots are rather feeble, more thinning is required; and where last season's canes are unusually luxuriant, they are twisted around the wires early in spring—the apparent cracking or breaking in performing this work never injuring them. In cases where the horizontal canes have not made sufficient growth, the older wood is allowed to remain for a time.

The grapes of these vineyards have been usually and most profitably sold as fruit; but when the price is low, a part have been manufactured into wine. The Dr.'s wine-cellars are very extensive; they are built of masonry, and roofed with arched brick, with several feet of earth above them. They contain at the present moment, according to his estimate, twenty thousand gallons—worth at lowest prices, fifty thousand dollars. Many of the largest casks or pipes contain 800 gallons each; they are made of best seasoned white oak, two inches thick, strongly hooped with iron, and with concave heads; and cost about fifty dollars each. Although serious doubts are entertained by many as to the propriety of introducing wine as a common drink, the Dr. thinks his manufacture will prove excellent for medicinal purposes. The best is made by mixture of the Isabella and Catawba juice. A large portion of his supplies, is many years old.

He showed me his famous plantation of plum trees, where the trees are planted in an inclined or nearly horizontal position over water. I found many of the plums however, punctured with the curculio, and the eggs in the young fruit. I am therefore induced to think that he is mistaken in supposing that the natural instinct of the insect prevents it from depositing its eggs over the water, but as these trees have borne well when others have failed, the water has no doubt served to destroy the larvæ that have fallen into it in the same way that pigs and poultry have done on land.

Before closing this hasty sketch, I ought not to omit a brief notice of W. A. Underhill's excellent brick barn, which is a model of its kind. It consists of two portions —one containing floor, bay, and stables,—thirty by fifty feet, and the other joining it, occupied as carriage-house and stables—the former thirty feet square, the latter fifteen by thirty. They are all neatly paved with hard burnt brick set on edge; the posts dividing the stalls are handsomely turned and varnished locust, and the other large timbers are also locust. There is an under-ground cistern, covered with arched brick and a foot or two of earth, containing 300 hogsheads. The barn having a slate roof, furnishes very pure rain-water, and pumping a portion from the cistern, it was found to be as clear as the purest spring water. J.

STONE AND STONE WALLS.

During a recent visit to E. B. Underhill of Yorktown, Westchester Co., who occupies a fine farm of 240 acres, we had an opportunity of examining some excellent specimens of stone walls for farm fences. Most of his farm was formerly encumbered with a profusion of boulders, the removal or sinking of which has cost on an average about fifty dollars per acre—some however requiring an expenditure of two or three hundred dollars per acre. A large portion of these stones have been used in building walls; many hundred rods have been thus constructed, and they serve as models of their kind. They are about four feet thick at bottom and 20 inches at top, and are four and a half feet high, and handsomely faced on both sides. The stone being mostly flat or stratified, (gneiss,) admit of a very perfect wall—flat and even on the top. Like all good walls, they are either laid in trenches or built over drains filled with stone. These trenches are as wide or a little wider than the walls, and are first made about a foot deep, the depth being afterwards increased by raising the earth on each side about six inches. These walls are never disturbed by the heaving of frost—some, 25 years old, being as straight and even as when built; while others, on neighboring farms, merely laid on the surface, are twisted, tottering, and tumbling in every direction. The cost of the best wall was about five dollars a rod.

Many of the smaller stone have been used for underdrains, for which their flat form well adapts them. Some underdrains thirty years old, are still perfect.

As a recreation, the proprietor has spent a few thousand dollars in constructing a fish-pond, bath-house, &c. The soil being partly pervious, one side of the pond has been built of hewn masonry, laid with hydraulic cement. This is the best specimen of the kind we have ever examined. The best Kingston water-lime was used, and the sand was obtained from a locality where a flood or freshet had washed it perfectly clean, and not having been worn and rounded like beach sand, it was about as sharp and perfect as if rock crystal had been broken up into granules. The wall had stood four years exposed to water, rain, freezing, &c., and the cement remained perfect and uninjured—the trowel mark still remaining distinct on the most exposed parts. For this wall, the bathing-house, a large and long culvert for the escape of the surplus water, &c., six hundred cubic yards of masonry had been built. The pond contains about two thirds of an acre, is eight feet deep, and is fed by springs brought into it by underdrains. It is well supplied with fish.

☞ It is with great regret that we receive tidings just as this number goes to press of the death of Dr. John A. Kennicot, at his residence near Chicago on the 4th inst. We have only space at present for this bare mention of an event which deprives the Horticulture of the West of one of its longest and most enthusiastic devotees.

At What Period of Maturity Should Wheat be Cut?

Numerous trials have been made in this country, but more particularly in England, to determine at what period of maturity wheat should be cut in order to obtain the largest quantity of grain, and of the best quality. The result of all these tests that have come under our observation, have led to the conclusion that when cut before the grain becomes hard, or while it is still in what is termed the doughy state, not only yields the greatest weight of grain, but that the quality of the flour made from it is whiter and better than that made from wheat that is permitted to stand until the grain becomes dry. Leaving out of view the quality of the flour, it may be questioned by some whether the grain that is cut at a period while it is still soft, is of itself, really heavier than it would have been had it been permitted to stand longer, or whether the loss in weight that has always been detected in these experiments in grain that is permitted to stand until it becomes dry in the head, is not owing to the actual loss of the grain occasioned by the various processes of handling. Upon this point we have never seen the opinion directly expressed. It is probable, however, that grain that is cut after, and during excessive dry, hot weather, does extract less weight from the rapidly drying straw than it would if cut and bound; in which condition it would be less exposed to all the drying influences of the weather—that the process of maturing is prolonged, and a greater weight of grain derived from the straw when cut and bound, than would have been obtained had the grain been allowed to stand exposed to the drying heat in the field.

We could quote the figures that have accompanied the various reports on the trials to test this question, but as the experiments have been so frequently made, and with such uniform results, we deem it sufficient at this time to state the simple facts.

A very careful series of experiments were made of this character, some years since, in Yorkshire, England, by Mr. John Hannam, and he sums up the loss by shelling, and in the *weight and quality* of the grain, from letting it stand until fully ripe, equal to $6 per acre, a sum or even half of it, which should not be lost sight of by the farmer.

Since the introduction of reaping machines, the wheat upon an ordinary sized farm may be cut within a reasonable time, and more generally at the period desired, which was not always the case when the reaping hook and the cradle were the implements depended on.

Upon the great western prairies where hundreds of acres of wheat are grown, upon a single farm, with a limited amount of labor at command, a new process of harvesting has within a few years been adopted. The grain is cut by what is termed "Heading machines." There are several kinds of these in operation, but all upon the same general principle. In cutting they leave the most of the straw upon the field. A wagon attends the cutter, into which the grain is delivered by the operation of an endless apron attached to the machine. The grain is immediately stacked from the wagon. With this process of harvesting, which economy of labor seems to render necessary, the grain of course must be so fully ripe as to prevent any injury arising from fermentation in the stack, but it must necessarily be attended with very serious loss, owing to the fully ripened condition of the grain. This fact, when labor becomes more abundant, may lead to the universal adoption of the ordinary reaping machine.

Oats.—This grain is more liable to serious loss in harvesting than wheat, and too many of our farmers commit the error of letting the crop become too ripe. Besides the loss of grain sustained in the process of harvesting, the quality of the straw for feeding to stock, whether cut up with the grain, or after it has been thrashed, is greatly impaired.

It is true, that oats when cut before fully ripe, require more care in curing, as well as more time than wheat. Oat straw makes an excellent feed for stock, and it is worthy the attention of every farmer to see that it is cured not only in the best time, but in the best manner.

Conversation on Tree Management---II.

Watering Trees.

N. I want to ask you, Mr. P., about watering young trees. I verily believe I killed some of my cherry trees by watering them. I set out 30 young cherry trees, and by way of trial watered one-half of them occasionally. All the watered ones died but two. Of those not watered about two-thirds lived. Now I would like you to explain this strange result.

P. This is nothing new nor very uncommon. Three-fourths of all the young cherry trees which die after setting out, put out leaves first and make a fair promise of growing, but as soon as the heat of the summer comes, many of them wither and perish. The roots do not seem capable of bearing the heat of the soil. If the ground is mulched in time by a good coating of old straw, the surface will be kept cool and moist, and they will be sure to live. A mellow, cultivated surface will answer nearly the same purpose, unless the roots are near the surface. Allowing the ground to become hard will often result in the loss of a considerable number, especially if the sun be dry and hot. But if the surface is watered, it soon becomes baked hard, and heats like a stone in the sun; hence the death of the newly set trees is pretty sure to follow.

N. But is there no way of watering trees without hurting them? Suppose the mulching has not been given them, and we have a sudden heat with drouth, how shall we manage in such a case as that?

P. With good management watering is scarcely ever necessary.

N. But would you never give it in any case whatever, or if water is applied, how would be the best way?

P. There may be rare cases where watering would recover a withering tree if already in leaf, but in such a case it should not be merely dashed on the surface, as is commonly done—to dry up in a few hours, without ever reaching the roots. A man might as well pour water on the outside of his cowhide boots to quench his thirst. If watered at all, carefully remove the earth from over the roots, then pour on enough water to pass down well among them. Then replace the mellow earth. By this mode you will see that the roots get an abundant supply of water and the top is not crusted, but left mellow. The trouble is however that the water soon soaks away or is dried up, and the tree is as badly off as ever, unless the watering is often repeated. Good mellow cultivation is far better and generally obviates the resort to water.

N. I lately tried watering some pear trees that did not throw out leaf, but they would not grow at all, and after a while I examined the roots, and found them water-soaked and rotten. Perhaps I did not give them enough water—how is that?

P. O yes, you gave them enough and too much. You water-soaked the roots and killed them.

N. How do you make that out? Who ever heard of water hurting the roots of a tree?

P. It is necessary to discriminate—a tree in full leaf throws off a large quantity of water through the leaves, and may then have a good supply of water without being overcharged. But before the leaves come out, there is but little evaporation and very little circulation; hence the water found at the roots is merely sucked up by them like a sponge, and not carried off. This is the reason the roots become water soaked and rotten.

N. How is the best way to water young trees before the leaves are out? Suppose they happen to be somewhat shrivelled—I suppose there is no help for them then.

P. No, you can recover them without much difficulty. Always observe that the roots only want water when the leaves are expanded. Before that time, you must water the stem or bark, which throws off moisture but moderately. Throwing water over such trees a few times a day will often recover them in a short time; but a better way is to tie straw or grass loosely about them, and keep this wet. It is surprising how quickly such trees may be recovered by such management. If however young trees have become much withered it is better to bury them wholly in moist soil for a few days, which will make them plump.

WORM ON GRAPEVINES.

The small pale yellow worms, covered with fine white hairs, which W. R. HARRISON sends us from West Haven, Conn., June 4th, as eating the young tender leaves at the extremity of the shoots of his grapevines, are the young of the White Miller, *Spilosoma Virginica*. These worms will feed and grow to a length of two inches, becoming then a thick bodied caterpillar, densely clothed with long soft pale yellow hairs, its skin straw colored, with a black stripe along each side. It is the most common large sized caterpillar which we have in our country, and occurs everywhere, feeding upon a variety of soft tender leaves, such as those of the bean, the convolvulus, &c.

The best thing Mr. H. can do for his grapevines, is to carefully look them over and pick off or knock to the ground every worm he can find, placing the sole of his boot upon each one of them in its turn. A. FITCH.

Protection of Cabbage Plants.

MESSRS. EDITORS:—The mode of protecting cabbage plants from the cut worm quoted in your paper of June 11th, from the Maine Farmer, is one which I practiced at least fifteen years, and can recommend to be effectual except when rain should so dampen the paper that the worms can crawl over it.

Another mode which I also used for protecting young seedlings and found very efficient, was to stir recent cow dung in water and pour the mixture on the ground, while dung was suspended, around the plant in a circle of ten or twelve inches in diameter. The fluid at once sank into the ground and the solid parts remain on the surface making a sort of carpet through or over which the cut worm would not attempt to pass unless softened by rain as to make no impediment to their motion.

Either of these modes is adapted to kitchen gardens only, and would hardly be practiced in the case of large field crops. Yours, &c., J. M. W.

New Haven, June 12, 1863.

Gas Tar on Seed Corn in Bucks County, Pa.

I was induced by the several articles commendatory of the process, published by you this spring, to have gas tar tried upon my own farm. My farmer, a very intelligent person, being skeptical of the safety of coating the corn with an article so impervious to moisture as gas tar, was very careful to soak his corn thoroughly in warm water before applying the tar, so that the kernels should have within them the moisture necessary to start the germ.

He then applied the tar, using every precaution to put on a very slight coating, and using altogether *less* than a "*gill* to the bushel." Thus prepared, the corn was planted; but adjoining, to test its comparative value, about an acre of ground was planted with corn that had been treated with soot and saltpetre—that is, soaked in water, to which a small quantity of saltpetre and a liberal supply of soot had been added. This is a favorite remedy with us against birds, as well as for worms and grubs.

The corn soon began to show itself above ground. That treated with soot and saltpetre came through vigorously, looking strong and healthy, while the tarred corn came up feebly, and in many cases not at all. Upon examining the hills, we found that the kernels were still there. Some had perished without sprouting at all; others had partially rooted and then died, apparently from some deleterious influence exerted by the tar. This theory has its confirmation in the general appearance of the field, for to this hour the plants from the tarred corn exhibit a much feebler growth than those which had the benefit of soot and saltpetre alone.

Since this experience, I have made inquiry among my friends, and the general testimony of those who have tried gas tar corresponds with my own experiences.

One neighbor, however, who had thoroughly soaked his corn in manure-water, found, he says, no difficulty on the score of its coming up; but complained bitterly that the birds appeared to have a perfect contempt for his tar—taking up his corn by the rod. My own experience is that the birds did not disturb my field materially, not appearing to relish the tarred corn any better than that treated with soot and saltpetre.

My conclusion is, that at best it is a hazardous experiment to use gas tar for this purpose. I would also caution those who have no experience in the use of soot and saltpetre, to be careful in its application, as an excess of the latter will kill the germ. When skillfully applied, it is probably as good an application as can be made for the purpose. Half a pound of saltpetre to the bushel of corn, we consider a safe and sufficient quantity. Soot may be used *ad libitum*, as it does not appear to have any dangerous qualities. This preparation is not only disliked by the birds and grubs,—the soot imparting an acid, bitter taste to the corn,—but seems to have valuable manurial qualities in starting the plant, and thus hastening it forward out of the reach of these enemies. E. L.

Falls Township, Bucks Co., Pa.

THE MAY BEETLE.

The insect which Mr. L. BAILEY, of Bailey's Cross Roads, Va., sends us May 24th, as destroying the leaves of his cherry trees after dark, is the May-beetle, *Lachnosterna fusca*. It is a very common insect all over our country, and almost every year we hear of it in one spot and another, as gathering in such numbers on the cherry and plum trees as to strip them of their leaves. The only remedy of any avail in such cases, is to spread sheets under the trees thus invaded and shake the insects off upon them, and gather them up quickly into a bag or covered pail, and kill them by pouring boiling water upon them, and then feeding them to the swine or poultry,—this to be followed up, night after night, till the trees are well rid of the scoundrels. A full account of this insect will be found in my Third Report on Noxious Insects, Trans. N. Y. State Agric. Soc. for 1856, pages 368-375.

June 2d. ASA FITCH.

THE BEST WAY TO USE BONES.

Eds. Co. Gent.—The "best possible way" to make bone phosphate, which J. M. A. inquires for in your paper of the 4th inst., and which you say you and many of your readers desire to know, is as follows:

Take one ton of ground bone (the finer ground the better,) and one-half an ox-cart load (¼ of a cord) of good friable soil, which will not break or cake by drying, and which is free from sods and stones, no matter how wet it may be when used. Place a layer of the soil and a layer of the bone, of about equal thickness, upon each other, (soil at the bottom) on the barn floor, or under cover in a shed or outbuilding, leaving a bushel or two of the soil to cover the heap when all the rest is put together. The heap will be 3 to 4 feet wide at the bottom, and about twice as long. In forty-eight hours it will be too hot to hold your hand in. Let it remain undisturbed until the heap begins to cool, which will be in a week to ten days. Then "throw over" the heap by "chopping it down" with a shovel and moving it "in end," thoroughly mixing the soil and bone. In a day or two it will heat again. Let it remain until it cools, or for eight or ten days; then throw it over in the same manner again. In a few days it will heat again, unless the previous fermentations have exhausted all the moisture in the soil and bone. Throw over each ten days until all the moisture is thus exhausted and it does not ferment any more; then it will be fit for use, and can be put away in old barrels, and it will be ready for use, without deterioration, for ten years.

All that is necessary to make bones operate as a manure, is decomposition—*rotting;* and to produce this process the bone only needs to be ground or broken fine, and to be subjected to moisture in warm weather with some substance that will absorb or retain the gases evolved during the process. Soil furnishes the essential requisites, and nothing more is needed to make bones an excellent and durable manure.

This is not a theoretical rule, merely. I have used many tons prepared in this manner during the last 12 to 15 years. I have tried it upon the same field, and side by side with the superphosphates of different manufacturers, and *always* saw the best and most permanent effects from the same weight of bone prepared in this manner, a ton of which costs, exclusive of the labor and soil, about half as much as a ton of superphosphate.

I do not wish to excite a war with the chemists, but I think their theory of the benefit bone derives by treatment with sulphuric acid is erroneous. The acid only aids the manurial qualities of the bone by the *mechanical* effect of subdividing it—making it finer. Its *chemical* effect is no better upon bone than it would be upon green horse-dung, and I would no sooner treat one than the other with oil of vitriol, with a view of adding to its *chemical* value as a manure.

I want to say further, that before treating bones in this manner, I tried several methods recommended by the farming newspapers without much satisfaction. I mixed half a ton of ground bones with 20 bushels of leached ashes, and half a ton with 12 bushels of unleached ashes, and the workmen could not open their eyes in the barn next morning until the doors and windows had been open long enough to let the *ammonia* out! As soon as I saw the effect of this process, I sent for a load or two of spent tan to mix with it; and thus saved a part of the ammonia, but the effect of this compost was not very striking.

I next mixed a ton of bone with wet yellow sand—a material about half-way between sharp sand and loam. This fermented finely, but it smelt so bad, and was so nasty, that I had to pay an exorbitant price to get it applied to the land. It had a good effect however.

I then mixed a ton of bone with a ton of ground plaster. I found the plaster was wholly incapable of keeping down the carrion smell, or of absorbing the manure given out in the form of gases. Water had to be added to this heap to support the fermentation, and the plaster dried hard and in lumps, and did not seem to participate in the fermentive process as the soil does. This did not have so good an effect as the bone and sand; and none of these compounds was equal to that prepared with soil.

I will also add that the newest bone is the best. The old dry bones which are collected after exposure to the weather for years, have lost much of their virtue, and will not heat so soon nor so much as those which have not lost their gelatine in that manner.

Ipswich, Mass., June 12, 1863. GEORGE HASKELL.

CATTLE IN THE HIGHWAY.

From the early settlement of Massachusetts, there has been a statute restricting the running at large of cattle, sheep, horses and hogs, but by a provision of the law, it was left optional for towns in their legal meetings for business, to pass by-laws, allowing them to run under certain restrictions. For instance, swine must be yoked and have rings in their snouts, the latter to prevent their rooting. Horses must be fettered, and so on.

The result of this state of things can easily be imagined. In the first place, an incredible amount of fence must be maintained to protect cultivated crops from the depredations of these street marauders, and, as running at large has the effect to make all animals unruly, this fence must be of a very substantial character to allow the farmer to sleep quietly and awake with the assurance that his labor-earned corn and grain were not in process of destruction. The consequence was, the streets were filled with all kinds of animals. Haggard looking cows, ready to run through any gate or bars the farmer might have down for a moment's convenience. Lean kine these, the direct descendents of Pharoahs, it did not require a large break to give them ingress to the farmer's territory. Besides they were an annoyance to all passers by. Nervous matrons and sensitive young ladies were in constant danger of being gored by wild beasts, and little children, on the way to school, must scud off and climb the nearest fence for very life's sake. Wherever there was a run of water crossing the highway, these herds were sure to meet in daily congregation, and if shade trees were standing so as to spread over any part of the thoroughfare, under their shadows the long hours of the warm day's nooning was sure to be spent, no matter how near it might have been to your domicil—if sheltering your front gate so much the better. The condition of things under such trees after the departure of animals, is so naturally anticipated that it needs no description.

As the result of this state of things, but very few shade trees were planted by the wayside, and of those very few lived, for the fresh earth at their roots was pawed over by animals who rubbed against their trunks and shook them with their horns until life was shaken out of them.

Of course when animals were allowed indiscriminate pasturage in the highway, a portion of these representatives of this unfortunate state of things must be of the swinish multitude, who sought no better employment than rooting up the sods and disfiguring it in every way their hoggish propensities dictated. The people had more pride than to fully imitate them, yet it was no uncommon thing to see large spots plowed up for repair of roads, which were allowed to remain in coarse furrows for the swine to root among. These patches, plowed by swine, readily became the territory of foul weeds; and thistles, dock, nettles and tall rank milk weeds completed the stock of street ornaments.

By our Massachusetts revised statutes of 1836, the law prohibiting all animals from running at large in highways, without keepers, was made very explicit. The right of towns to set aside the general statutes, by adopting by-laws was annulled. Towns were obliged to choose field drivers, and a penalty annexed for refusing or neglecting

to do so, and the field drivers were sworn to a *faithful performance of their duty*, which was and is to take up all animals, such as neat cattle, horses, sheep and swine found going at large without keepers, and impound them in the town pound.

As long as the streets had been used for universal pasturage, and inasmuch as many, among whom were thrifty farmers, had placed large dependence upon them for that purpose, it is not strange that many in the outset, *rebelled* and showed violent opposition to the enforcement of the law, but the number and influence of such was small in proportion with the whole, so the opposition eventually died out.

The effect of the law has been excellent in all its particulars. Teams and foot passengers now find the streets clear, so there is no danger of horses being frightened or people gored. In repairing roads, great care is used to plow no more than is necessary for the purpose, and the ground is left so smooth and fine that grass soon sods it over. We have few weeds in our highways now, but on each side of the travel path are rich ribbons of green; tree planting has received a new impulse, and fine rows are springing up over the State. In fact, this excluding animals from the streets, so far as comfort and good looks are concerned, is one of the great improvements of the age, and shows a decided progress in civilization and refinement, wherever it is practiced.

Whom do the Highways Belong to?

This was a question considerably discussed in a few circles, when the law prohibiting animals from running therein was first enforced. Some pretended to believe that they belonged to the town or county where they were located, and that each individual had a right to use them for pasturage. This brought up another point, not quite so agreeable. If towns or counties *owned* the highways, they would readily be required to make and maintain one-half of all the fences on the lines thereof, which would make a heavy and perpetual tax on the community, and be a great relief to individuals. But the common law of England, of some four hundred years' standing, settles this matter very justly, where it says, "The king himself, has no right to the highway except for purposes of travel and repairs,—that the trees and stones except such as are needed for repairs, with all other minerals, and the grass, belongs to him through whose land the way passes."

Consequently then, highways belong to those from whose lands they are taken, for all purposes except travel and the right to keep them in repair, and any person has as good a right, by common law, to turn his animals into his neighbor's fields to feed, as he has to turn them into the highway adjoining those fields.

Taking all the particulars into consideration, the wonder is that this universal road-pasturing has ever been tolerated at all. That it is tolerated now, in any section of country, is still more wonderful, and must be owing to the fact that those who do tolerate it are ignorant of the advantages that arise from the enforcement of a law whose effects must be admired by all who see its beautiful operation. WILLIAM BACON.

Richmond, Mass., June 6, 1863.

REMEDY FOR KICKING COWS.

EDS. CO. GENT.—I have noticed several pieces in the CO. GENT. and N. E. Farmer, lately, in regard to "kicking cows—their cause and cure"—some of which were *effecting* to a Yankee's risibles, if not *effective* of the desired end. Of the various methods of cure, I wish to notice but the one "*cutting the tail off* close behind the ears." Perhaps in many cases that is advisable, but when the cow is an *extra one*, by all means *spare the tail*. Last November I bought a "kicking cow," black as a coal, as homely as Lear, and [illegible] strangers appeared a "real tiger." The owner, a farmer [illegible] years old, said she would make more butter in a year than any other one he ever had, and he offered her for sale solely because her heels were too light for her body, and as he depended on hired help entirely to do his milking, he would'nt *bother* with her any longer. I paid him $16 for her, which was her value to fat for beef. I milked her three times—the fourth time she pushed the bottom of my pail out; but as I am a peaceable man, I made no words with her, thinking that as she was six years old, she had probably heard as strong arguments in her youth as any I could offer. Instead of words or blows, or trying to "catch her foot," or quieting her by letting her "sit in my lap," &c., I set up firmly a strong plank close behind her, having a two inch hole in the lower end; put a ring in the post of the stable, some three feet farther back; took the hitching strap from a halter, put it through the hole in the plank, and buckled it to her right hind ankle; having first taken up one fore leg and buckled a strap around it, so that she would be obliged to allow me to put the strap to her hind leg. I then put the other end of the strap through the ring, and drawing it *taut*, buckled it—then let down her fore leg and bid her *kick if she dared*, and sat down and finished milking. After a few efforts, she saw it was useless to try, and gave up. In two or three days she learned to let me put the strap on her ankle quietly, without raising her foreleg, and she has had it on every milking since, and proves to be a very valuable cow, worth to-day $45. It does not take a fourth part of a minute to put on and take off the strap, and I set the pail under her and milk with perfect impunity, while she actually appears to *like to be milked*, without being in fear of a *scrape*. I milked her to within three weeks of calving, when she gave two quarts per day—now gives eighteen to twenty-two quarts, and *very rich* at that.

To any one who has a *first rate* "kicking cow," and can conveniently turn her into a stable to milk, I say *go and do likewise*. Don't "fret and stew," scold and maul the innocent cow, because her bag is as ticklish as some children's necks! An *extra cow* is worth saving at *so little* extra trouble as mine costs me. After a year or two, and perhaps less, I think she will forget that she ever *could kick*, and the strap may be left off; but if not I care but little. A *staple and ring* in the stable floor might be better, where several kickers are milked side by side, than the upright plank. BON' LAC.

Randolph, Vt., June 5, 1863.

A LARGE LOCUST TREE.

EDS. CO. GENT.—The largest Locust tree in this town, if not in the county and State, was cut down a few days ago in the garden of Mrs. Wells in this village. It was 65 feet in height, some of the upper limbs having previously decayed and fallen. At 5 feet from the ground the circumference of the tree was 7 feet 9 inches—at 32 feet from the ground the circumference was 5 feet. The best part of the trunk was cut in one log, thirty feet long, and measuring in the middle 6 feet and 4 inches in circumference after the bark was removed. This makes the contents of the log about 90 cubic feet, worth in New-York about $1.25 per foot, say $112 for the log. The trunk was perfectly sound. The stump showed 75 concentric rings, indicating that the tree commenced its existence about the year 1788.

Yonkers, June 10, 1863. THOMAS C. CORNELL.

GAPES IN CHICKENS.

MESSRS. EDITORS—I notice on page 383, vol. 21, that gapes in chickens are attributed to lice, which is much at variance with the experience of this establishment. Lice or no lice, gapes have invariably been the cause of death to many with us, when they were given *wet feed*, bread soaked in milk or water; and when dry bread crumbed and screenings, etc., were given, the bill of mortality has been extremely small from any cause, and none from gapes. That lice are far from desirable, I agree; but how a louse of any description can be changed into a worm, is beyond my comprehension, and well may the writer add—"In this opinion I may be mistaken." J. PIERCE BELL. *Elm Grove, June* 15, 1863.

CONSTRUCTION OF FARM CARTS.

MESSRS. EDITORS—As the time for using carts has arrived, allow me to send you two drawings of four wheeled carts which I will try to explain as clearly as I can. I

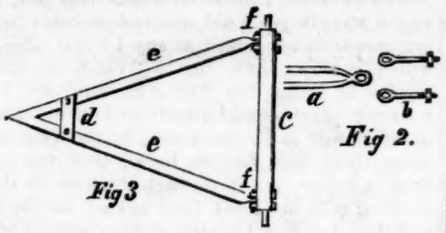


Fig 2.

Fig3

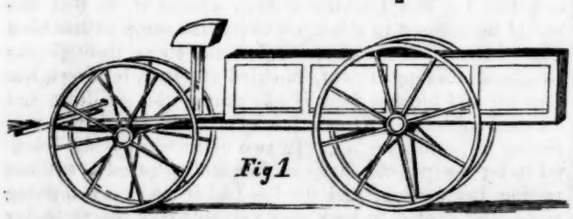


Fig1

will take the cart shown in fig. 1 first. The appearance will explain the side. The tongue is fastened to the hind axle with irons like those shown in fig. 2. Each hind end of the tongue is inserted in the iron *a*, and bolted with two bolts, and two eye bolts. The irons shown at *b*, are put through the axle the width of the iron *a* apart and secured with nuts. Then a bolt is put through the eyes in *a* and *b*, for the cart to tip on. The axle bolted to the cart's body. Fig. 3 shows the tongue of this cart; *c* is the hind axle, *d* the rocker iron. The tongue rests on the forward axle without a rocker, simply an iron bolted to the tongue; *e*, sides of the tongue; *f*, irons which fasten the tongue to the axle. Distances between the axles 4 feet 6 inches. The tongue is made of white oak 2 by 4 inches, or larger, according to the size of the cart. The length of each of the two pieces of which the tongue is made are 5 feet 6 inches. The hind ends of the tongue where they are fastened to the axle are 3 feet 2 inches apart and the forward ends of the tongue meet in a point. The rocker iron is bolted across the tongue 9 inches from the point. The axles are of the usual length.

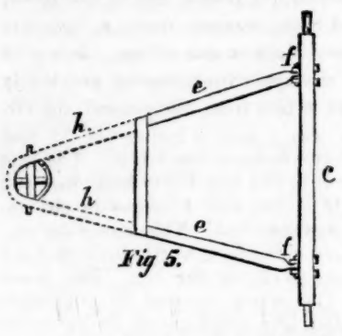


Fig 5.

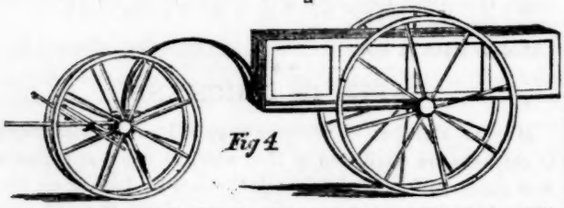
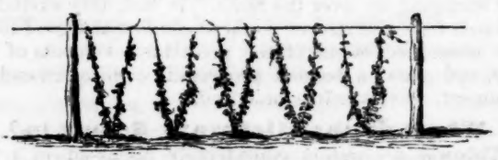


Fig 4

In cart No. 2 the hind axle is of the usual length, while the forward axle is but 36 inches from the outside of the hubs. The tongue of the cart No. 2 shown in fig. 4, is made of white oak as far as the front of the cart body from there to the forward axle it is of two curved irons, (see dotted lines in the tongue fig. 5.) The curved irons are 2 by 1 inch, curved high enough so the forward wheels will turn under them, similar to the wheels of a coach. The forward axle is half the length of it, with 2 or 3 inches to clear, which equals 20 or 21 inches or more, according to the size of the wheels forward of the cart-body.

I use a cart like No. 1, which is the simplest and cheapest. I take the wheels off my wagon and fasten them on my cart. Most any farmer with ingenuity enough can make the tongue, and look in the box of "old iron" if he has one, and may find part iron enough, and get the rest at a blacksmith's and have it fitted; then he will have a cart that he can use. A great advantage in using a four-wheeled cart is, that it relieves the horse of a heavy load from his back. A two-wheeled cart slats a horse very much if the load is heavy or the road rough, while a cart with four wheels does not. If you are shovelling out of a cart, or manuring in the hill, the load bears harder on the horse's back after about half is unloaded, than it does with a whole load in a two-wheeled cart; but in a four-wheeled cart it does not bear on the horse's back any, but on both axles. I should rather have one of these carts than one with two wheels. D. D.

Fall River, Mass.

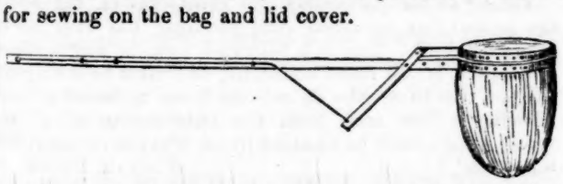


MODE OF TRAINING LIMA BEANS.

W. A. Underhill of Croton Point, North river, has adopted a mode of training the Lima bean, which is exhibited in the accompanying figure, and which he thinks possesses some important advantages over the common mode of training on poles. A strong wire is stretched from the tops of posts placed at a distance from each other; and to this wire two diverging cords from each hill of beans are attached. This mode gives more complete exposure to air and sun, affords larger crops and has a neater and more finished appearance than the usual way of training.

A FRUIT PICKER.

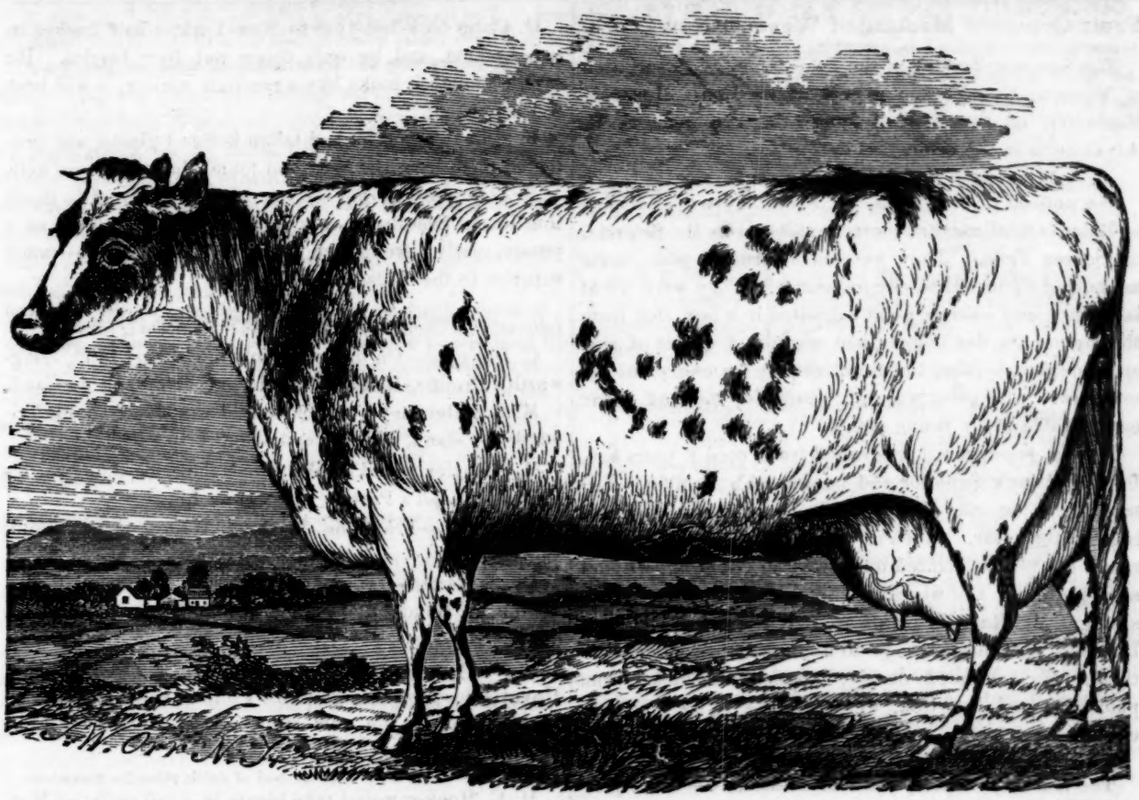
MESSRS. EDITORS—Here is a drawing of a fruit picker which I made a few years since, and having used it a considerable time I find it very useful in gathering the fruit on the outer limbs. It is made of 1 inch hoop iron, and about 4 inches in diameter, with holes punched all around for sewing on the bag and lid cover.



The handle is about 1 inch square, and six or seven feet long. The lid is worked by means of a wire, the size of a pail bail, running down the handle, and held in place by 3 or 4 staples which should not be so small. The wire is bent into a circle at the lower end, and another a little farther up, to serve for a handle to work it by.

The bag should be of cloth, and large enough to hold about 4 quarts. NATHAN SHERMAN. *Waverly, Pa*

LARGE STRAWBERRIES.—The committee of the Massachusetts Horticultural Society, in their last report, give the following weights of single specimens of some of the new strawberries: Six berries of the Triomphe de Gand weighed 3 1-20 ounces; six of the Imperatrice Eugenie, 4 1-16 ounces; six of La Constante, 4 1-16 ounces, and six of Admiral Dundas, 4⅝ ounces.



Ayrshire Cow "White Lily"—the Property of Samuel Campbell, Esq., New-York Mills, N. Y.
[*See notice of Mr. Campbell's Herd on page* 240.]

AGRICULTURAL MACHINES.

The value of agricultural machinery at the present day, to the farmer in particular, and to the country, and we might say to the world in general, can hardly be estimated. Had our farmers to depend alone upon the simple implements of husbandry in use thirty years ago, instead of having millions of bushels of grain, and hundreds of millions of pounds of pork for export to other countries, they would hardly be able to produce a supply for our own country. Now, one man with the mowing machine, the reaping machine, or the horse rake, will accomplish as much labor in a day as ten men could with the hand implements of former times. Previous to the breaking out of the present rebellion, the crops grown were fully equal to the capacity of the whole farming force of the country to secure, and now when a large proportion of the effective strength of the rural districts is called to the battle field, our crops would go unharvested but for the introduction of the modern labor-saving machines. We are informed that such is the increasing demand the present year, for harvesting machines in the great West, that the manufacturers cannot fully supply them.

It is probable that portions of many of the farms in the New-England States formerly devoted to hay and grain, that are not adapted to the use of machines, will be transferred to pasturage. Such lands can hardly compete with the unbroken fields of the West, in the production of grain. H.

☞ THE OSWEGO CO. AG. SOCIETY will hold its Annual Fair for 1863, on the Society's grounds in the village of Mexico, on the 22d, 23d, and 24th days of September next. By order, J. R. FRENCH, *Sec'ry.*

VENTILATING HAY-MOWS.

Ventilating large bodies of hay is not often practiced, and results in mow-heat hay, when it is not thoroughly cured. In the summer of 1861, I filled a bay thirty-four by twenty-two feet, and eighteen feet high; as I supposed, *well cured.* Soon after it was filled, I had occasion to visit the mow, and found that a large amount of steam or vapor was rising from the hay. I took a hay-knife and cut two round holes four feet in diameter and five feet deep, which when done had the appearance of an escape-pipe from a steam-boiler. The work of cutting was a good steam-bath. The heat subsided in a few days, and the hay came out bright.

Last year I constructed a ventilator in the same bay, of four scantling, with rounds two and a half feet long and fifteen inches apart, and placed it in centre of the bay, over a hole in the floor connecting with the air outside. It is in fact a four-sided ladder. I saw no signs of steam on the mow after it was filled. HIRAM WALKER.

Mexico, July 4th, 1863.

A HELP TOWARDS FENCING.

Those new kind of cattle stables given some time ago in your publications, which, on account of their being elevated, prevented cattle outside from hooking those in their stalls, suggested to my mind that the same principle might be applied to fence building. I have seen a fence that has stood the test of years on the public highway, made only of a ridge of earth with posts put in it, capped with a 2 by 4 inch piece, and a board under it. The ridge was so steep and high swine could not disturb it only at the base, and coated with grass the frost did not injure it as one would imagine—especially with a high ridge, would not many hedge plants answer well that would not otherwise—the hemlock, red cedar, barberry, and buckthorn?

Seneca County, N. Y. HENRY VOORHEES.

Fruit Growers' Meeting of Western New-York.

The Summer Meeting of the Fruit Growers' Association of Western New-York, was held at the Court House in Rochester, on the 24th of June—the President, S. H. AINSWORTH in the chair.

Russel's Seedling Strawberry.

We noticed on the table, an exceedingly fine display of Russel's Seedling Strawberry, exhibited by Mr. Schuyler of Seneca Falls. They were of enormous size, some measuring 6¾ inches in circumference. They were all of large size, and a single plant exhibited in a box, dug from the ground the day before, had on fully 2 quarts of ripe and ripening berries, the finest display for one plant we ever saw. This plant was four years old, and had borne considerable many young plants.

Mr. Schuyler said it was raised from seed 8 years ago, from McAvoy's Superior and Longworth's Prolific. The seeds were from the McAvoy. The original plant is bearing full this year. Much of the fruit on exhibition was raised on plants planted on the 19th last Oct., without any covering in the winter. They appeared strong in the spring. Mr. Russel's plants are now a sight to behold—he could not find language to express the prolificness of them. He cultivated deeply. Specimens raised from plants planted last Oct., were from 6¼ to 6¾ inches in circumference.

Discussion on Strawberries.

The meeting took up for consideration the first question—"What is the most profitable strawberry for market?"

Mr. Langworthy would recommend the Wilson's Seedling, Triomphe de Gand and Early Scarlet—would also recommend Early Scarlett as the best one variety for market.

H. E. Hooker would think the Wilson's the best, as it brings about as good a price, and far more quarts to the acre.

M. B. Bateham, Ohio, visited a large strawberry plantation recently, of 15 acres, near Cincinnati. He only had two sorts, Wilson's and Triomphe de Gand, and thought strongly of throwing out all but the Wilson. He could raise it twice as easy as any other sort. The flavor was good when ripe. In some parts of Ohio they are using the Iowa and Jenny Lind for early sorts.

C. Downing, Newburgh—The Russel Prolific, from a visit just made to the beds, is certainly the most productive large strawberry I ever saw—thinks it highly probable it will prove very valuable.

C. Hooker has large plantations of strawberries, and has discarded all but Wilson's and a few Early Scarlet.

C. Hoag, Lockport, only uses Wilson's—all other sorts not worthy to cultivate. The Downer's Seedling is next in productiveness to the Wilson, and deemed the best flavor. The Fillmore produces well and promises well.

P. Barry would be in favor of the Wilson. Nothing will produce like it, or sell as well. Although poorer in quality, people will give twice as much as they will for better though smaller varieties. If the Russel should prove firm enough to carry to market, it looks as though it would exceed the Wilson. The promise is certainly very good.

R. Schuyler thinks the Russel will be firm enough to carry very well indeed—has carried them to market 50 or 60 miles successfully. One peculiarity is, the last berries are large. Thinks its productiveness is greater than the Wilson.

G. Clapp took last year to New-York, a half bushel in two baskets, and he only threw out four berries. He says, although it looks like a pistillate variety, it will bear well alone.

R. Schuyler said he had taken isolated plants, and protected them from the bees, and found that they bore well.

Mr. Langworthy said for one he was disposed to think this Russel Seedling a very valuable berry—as large as a potato, early, productive, and very fine flavor—much superior to the Wilson.

QUESTION—Which are the four most desirable varieties for general cultivation, including early, medium and late ripening sorts?

C. Downing—On his soil, would like Jenny Lind, Longworth's Prolific, Russel's Prolific, and Triomphe de Gand.

M. B. Bateham—For Ohio would say Jenny Lind, Triomphe de Gand, Wilson, and Longworth's Prolific.

R. Schuyler would say McAvoy's Superior, Longworth's Prolific, Russel's Prolific, and Jenny Lind.

W. Smith—Triomphe de Gand, Wilson, Jenny Lind, and Hooker.

Dr. Sylvester—Jenny Lind, Hooker, Wilson, and Triomphe de Gand; if designed for market, should leave out the Hooker.

P. Barry would select for his own use, the Early Scarlet, Hovey's Seedling, Longworth's Prolific, and Triomphe de Gand. Among the new strawberries, Russel's Prolific and La Comptesse.

QUESTION—What is the best method of cultivating the Strawberry?

H. E. Hooker would take plants in April or 1st of May, and land not previously used for strawberry—plant in rows four feet apart, and one foot in the row—keep the ground between the rows clear with a horse and hoe until the runners commence running, when the runners should be arranged evenly over the ground. They will fill all but about two feet in the middle of the rows. The next year they will be clean and beautiful, when he would let them bear—after having borne, he would plow them up.

H. N. Langworthy has raised the best berries in hills 2 or 3 feet apart, keeping off the runners, and the ground clean. The plants become enlarged very much.

Mr. Moody agrees with Hooker that we should only attempt to raise one crop. The fruit next year will be much smaller.

E. W. Herendeen said that the Triomphe de Gand would not bear well unless the runners were kept off. Had seen rows side by side, when those which had the runners kept off had on two or three times as much fruit as those which were allowed to grow.

P. Barry said it was difficult to give good cultivation unless the plants were kept in hills.

M. B. Bateham—We believe in doing things as easily and cheaply as we can and produce the desired results. Plant in rows 3 or 3½ feet apart, and 10 or 12 inches in the row—kept clean by a horse—allow them to bear two crops. In rainy seasons the plants are large and smooth and productive. Yet the fruit is of poor quality. When we have dry seasons the fruit is much better. As much sun and air as is possible, is necessary to have them grow.

Protection of Currant Bushes from the Currant Worm.

QUESTION.—Which is the best method of preserving currants from the ravages of the saw-fly or currant worm?

It was stated by several members that the most easily applied and effectual manner of preventing the currant worm was the free use of air slaked lime, applied when the dew was upon the bushes, and repeated whenever it became necessary.

The Best Blackberries.

QUESTION.—Which are the most desirable varieties for general cultivation?

The President said he had visited the plantation of Dr. Miner. He has a kind of running sort, which he ties to stakes—free from thorns, and grow from the ends, striking roots similar to the Black Raspberry—as large as the average New Rochelle, qualities very good—better than any other sort. It is very productive, presenting, when ripe, an almost black appearance.

This fruit was also highly recommended by others who had visited the plantation.

Cultivation of the Raspberry.

QUESTION.—Which is the best method of cultivating the raspberry?

C. Downing would plant about 4 feet apart each way, allowing 3 or four canes to each hill—tied to stakes in the spring. After bearing, the old canes should all be taken out and the stakes removed to the house—in winter they should be buried.

NORTHERN AND SOUTHERN CAVALRY.

EDS. CO. GENT.—We are often told by writers in the newspapers, and by people in conversation, that the horses in the Southern cavalry are superior to those in our army—also that the south during many years has paid particular attention to the raising of horses adapted to the race, while on the contrary at the north such horses have been neglected, and trotting horses, or else large animals for agricultural use have been preferred. True in part, but the annals of the turf show that northern horses have beathe southern, even in speed as well as trotting, and they certainly are their equal, if not more than equal, in their power of endurance. Indeed this was all admitted at the south previous to the rebellion. If they wanted to improve their stock of horses, they sent north for the material; if a wealthy planter wished nice, elegant horses for carriage or family use, he went or sent north to buy them. Indeed comparatively few horses were raised in the slave States, excepting Virginia, Kentucky, Missouri, Tennessee and Texas.

A wealthy Texan who is a brother of the present Governor of that State, told me that he had spent the summer of 1859 at the North, for the purpose of selecting the best breed or blood of horses and cattle, to improve the stock of his own State. He visited the best reputed stock owners in the North, including the States of Virginia and Kentucky, and attended several State fairs, devoting six months of time to the object he had in view, which was to obtain the very best. He finally selected some Morgan horses from Vermont or New-York, and I believe a few other horses from the same States, and some cattle from Kentucky. Doubtless many inferior horses have been bought and accepted for the government by dishonest or incompetent contractors. An inspector told me that he was offered $500 extra by an agent if he would accept an entire lot of 500 horses which said agent had bought for the government. The inspector refused the bribe, and rejected 200 of the horses.

Notwithstanding all this, the chief reason of the superiority of the horses in the southern service is, that they are generally *owned by their riders*, and in cases where they are not thus backed, their owners are in the same company or regiment, to see that their horses are rode *carefully*, and that they are well fed, and cleaned at night and before mounting, that the blankets are evenly and smoothly fixed beneath the saddles, so as not to hurt the back of the horse. Let these important items to the comfort and well being of the horse be *properly done*, and there are comparatively few horses which will not do every needed army service, and keep in good conditon.

At the South, riding and traveling on horseback is, or lately was, much in vogue, and more especially in all the region not intersected by railroads; but they rarely urge the horse to a greater speed than a fast walk, or a moderate pace, the last being preferred and considered the easiest. Thus moving they will average from thirty to forty miles per day for weeks, and even months in succession, with little or no damage to the horse. If I remember right, our cavalry have not averaged such a speed in any of their rai ls. If the reported scarcity of grain and forage at the South be true, it is probable that their cavalry will be less efficient this year than last, unless they succeed in obtaining supplies from the Northern States, which they are now attempting.

Let us see how the horses in the army of the Potomac are used generally; of course there are exceptions, but I believe them to be comparatively few. Uncle Sam owns the horses, and uncle Sam's boys, old and young, officers, surgeons, privates and contrabands, think that he is rich enough to buy them all another horse whenever required. So they gallop up hill and down hill, and very often this gallop is increased to a run, as I have witnessed at Aquia, through the sands of the Potomac, or over the hills in that vicinity. Even in the city of Washington, persons have been in danger of being over run by these fast riders. I remember once last winter to have seen two ladies thus imperilled by a horse spurred at a run by a soldier. The shrieks of the ladies stopped the horse, and as soon as they had escaped, he was spurred onward at his former speed, his rider being apparently angry at the check which his momentum had received, which threw him on the neck of the horse, and nearly into the street.

When I first arrived at Washington, several months ago, I supposed those fast men on horseback were bearers of important dispatches, and that some great military movements were in progress, but all remained quiet in the army, and I soon learned that this go-ahead-ativeness on horseback was a mere army custom.

It is this unnecessary fast riding, and the want of proper care when the horse is unsaddled, which has killed and disabled thousands of horses in the Army of the Potomac. As a proof that this is so, take the example of the 3d Indiana cavalry, whose men *own* their horses, and consequently feel a personal interest in having them well fed and properly cared for, nor do they without reason, ride on a gallop or a run on every frivolous occasion. Their horses are now in as good condition, with very few exceptions, as when they entered the service, nearly two years ago. I was recently told by an intelligent private of this regiment, that their dead and disabled horses amounted to less than fifty, besides which a small number (about 20) had been captured by the rebels. There is, I believe, but one other regiment in the United States service, where the ownership of the horses is vested in their riders, and this is from Pennsylvania.

Every large owner of horses, and all livery stable men know the treatment which their horses generally receive from those to whom they are entrusted for use even for a short time, and Uncle Sam's horses fare much worse, because the old gentleman is rich and easy, nor does he even force payment from those who kill his horses by sheer abuse. To the horse race, including the mule, he is a hard master, for he permits them to be killed by hard usuage and neglect by thousands. Their carcasses abound and taint the air of all places occupied by our armies. A gentleman connected with Buford's brigade told me on the 12th inst. that there were 1,101 dismounted men belonging to it at Dumfries, in Virginia, waiting for a fresh supply of horses, in order to move. Yes, we had thousands of men belonging to the cavalry without horses at the very time when the rebel cavalry was entering Maryland and Pennsylvania on the raid now progressing.

June 18, 1863. S. B. BUCKLEY.

☞ Our correspondent, SUEL FOSTER, Muscatine, Iowa, sends us samples of Wool from the flock of Hon. J. B. GRINNEL, including specimens from a ram which sheared 15 lbs., and a ewe which sheared 12 lbs.

CONNECTICUT RYE.—A field of rye in Simsbury, Ct., is said to average 7 feet in height, and several stalks from it, left at the Hartford Courant Office, are 7 ft. 7 in. long.

Farming, etc., at the Utica Lunatic Asylum.

In recently visiting this institution we obtained a number of interesting facts, which may perhaps possess some value for the agricultural reader.

By extensive draining and good management in other respects, the products of the farm and garden are constantly on the increase. As hemlock boards have been obtainable at $8 per 1,000, or $9 if cut in strips as required in practice, a style of draining similar to that already described as formerly in vogue in New-Jersey, is the one that has been chiefly followed here—viz., a bottom board 12 inches wide, on which rest the two strips nailed together at a right angle, respectively 4 and 5 inches in width. These drains are at intervals of 30 feet, and at a depth of about 30 inches. Rubble stone are filled in along the sides of the drain upon the edges of the bottom board, with the view of retaining a passage for the water if that within the drain becomes accidentally closed. Considerable tile draining has also been done.

The stock kept on the farm has been gradually increased from six horses, fifteen cows, and eighteen store-hogs (together with fattening 9,000 lbs. pork) in 1849,—to eight horses, two yoke of oxen, thirty-three cows, one bull, one calf, and one hundred and three hogs, (together with fattening pork to value of $1,005—number of lbs. not stated) in 1862. The value of the products of the farm and garden was estimated in 1851 at $2,000, and is given in detail for 1852 at $3,197.92. In 1862 it aggregated:

Vegetable products,	$5,358.57
Milk, 97,320 quarts at 3 cents,	2,919.60
Pigs and pork sold or consumed, less cost of feed purchased,	1,150.18
	$9,428.35

Or, omitting the Pig and Milk accounts, as we are not quite sure that they are included in the statement for 1852, the value of vegetable products last year was $5,358 against $3,197 ten years before—being an increase of over two-thirds. The products in the live stock department were doubtless increased in an equal proportion. If every farmer could show as good progress, the government receipts from the income tax would probably be larger than they are.

The question of the average yield of milk per year in a dairy, to each cow kept, has been often mooted, and may perhaps receive some light from the following figures:

1858—22	cows yielded	63,578	quarts—average per cow,			2,764	quarts.
1859—23	do.	61,921	do.	do.	do.	2,692	do.
1860—31	do.	70,379	do.	do.	do.	2,267	do.
1861—30	do.	72,140	do.	do.	do.	2,405	do.
1862—33	do.	97,320	do.	do.	do.	2,949	do.

To arrive at these averages, however, we take the *whole number of cows kept*, not the average number in milk. Thus at the time of our visit in June, there were 28 cows on the place, but only 21 of them in milk.

It will be observed that the average yield of milk per cow was raised in 1862, more than 500 quarts upon the preceding year, and fully 400 quarts upon the average of the four previous years included in the steward's records. This large increase is explained in the following paragraph from the report of the Superintendent, Dr. JOHN P. GRAY, for the year 1862:

"For a year past we have cooked by steam the feed for the cows, which has added largely to the quantity and quality of the milk. Experiments have demonstrated that we thus increase the quantity of milk about six gallons per day, enrich it in quality, and without adding to the amount or character of food, keep the cows in better condition than formerly."

The system now adopted which is producing so good results, is in fact almost purely one of soiling. The 21 cows then in milk, gave June 23d, a total of 304 quarts, for the day, and four of them came in as long ago as September last, and the rest at intermediate periods. They have a small bit of pasture in which they run during the day, but the main dependance is on cut feed. They are salted at the stable three times a week, and curried enough to keep them clean.

The system of winter management is as follows: At about 5 A. M. hay is distributed to them; the stable is then cleaned out. Water warmed by the steam engine of the establishment is brought to the barn, with which the udder is washed previous to milking. They are then milked, and, after breakfast, receive a little more hay. The steamed food, which forms the next meal, is thus prepared: there are two sheet-iron cans, each containing perhaps 20 bushels; they are filled with roots, scraped to remove the dirt adhering to them, and covered on top with 3 or 4 inches deep of meal, the whole depth of the can being 5 feet. Waste steam is admitted at the bottom, and the cooking process continued about 4 hours, or perhaps from 3½ to 4 or 5 hours, the latter if the steam is low. By this time the whole is thoroughly cooked into a pulpy mass. It is then taken out and put into a box on truck wheels, in which it is mixed with about one-third its bulk of middlings and shorts. The shorts are in the proportion of twice the quantity of middlings. After mixing, three-quarters of a bushel of the whole is given per head. The main dependance in roots is the beet, but carrots are also used in considerable quantity; ruta bagas are found to affect the milk. Beets are preferred to carrots, but cows are found to like an occasional change for the sake of variety. This feeding is continued from early in autumn until green food becomes plenty in May, say for full seven months. The long blood beet is the variety selected as best.

Dr. GRAY'S experience fully corroborates the testimony of others as to the importance of gentleness and mild temper in the management of the cows; and he narrated instances in which a temporary change from the usual herdsman to those who were harsh and rough in their treatment, had at once shown its effect in the diminished amount of milk obtained.

In order to preserve the roots raised, a brick buil ding was erected in 1861, 36 by 80 feet, with a basement of seven and a half feet, impenetrable to frost. The story above, or ground floor is eight and a half feet in height, and is devoted to grains, peas, beans, &c., with a loft for the storage of light farm and garden implements.

The stable in which the cows are kept, is well lit and ventilated, and kept scrupulously neat. The cows are in two rows of stalls, attached by chains with sliding rings, the stalls facing a wide alley through which the feed is given out. The manure from the stables is composted, and a tank for the liquid portion of it was put down in 1861, of over 1,300 gallons capacity, in which 2,654 gallons were collected during 1862, which was mostly pumped from time to time on to the compost heaps.* Arrangements are making in connection with the buildings, by which everything of a manurial nature, both solid and liquid, will be easily preservable for use; and the importance of this will be perceived when it is known that the family of pa-

* Some trials were also made with Liquid Manure directly applied to grass and other crops, in strips, for the purpose of comparison with the remainder of the field; and the results, we were assured by Dr. GRAY, were such as to convince him fully of the economy of liquid manure cisterns, to insure its being saved either for this purpose, or for application to the compost heap, as above described.

tients, attendants, and others, is ordinarily from seven to eight hundred individuals. The means which Dr. GRAY proposes for the accomplishment of this end, will yield some valuable results as a test of the quantity and quality of the manurial product from an establishment of so many persons, both in the aggregate and as regards the solids and liquids respectively.

To such an institution as this, the farm is a most important adjunct, securing an otherwise almost unattainable variety in the diet of the occupants, at a reasonable outlay, while the garden labors furnish for many of the inmates a sort of employment well suited to their condition and strength, and much more cheerful than any kind of in-door work or exercise. In the household arrangements, the laundry, kitchens, &c., there is much that it might be interesting to refer to, if space permitted. We shall only add a few words as to the method of heating and ventilation.

As the buildings extend along a front of 550 feet, with wings enclosing a hollow square two or three hundred feet in depth, and having a fourth range of buildings on the farther side of the square, the task of heating is necessarily one of great difficulty and expense. The hot air furnaces formerly employed, had never been fully satisfactory, and in 1853, a new system was decided upon, which, with various modifications introduced during the five or six succeeding years, has now been perfected so as to realize all, or more than all the benefit ever anticipated from it, and to form a model for all public buildings of similar size.

A thirty-horse power steam engine is employed, with which are connected two boilers eight feet in diameter and 26 feet long. Steam from these boilers is carried by piping to coils placed in air chambers constructed for the purpose in the basement halls. A series of these air-chambers extends throughout the basement, containing coils of steam piping one inch in diameter, the coils nine pipes wide and four deep, and thus capable of radiating a great quantity of heat. Cold air is blown by fans through an air passage perhaps ten feet wide and high, in a constant current; this current reaches the air chambers through openings beneath the steam coils, and, passing through them, is charged with sufficient heat to supply a continuous stream of warm air through registers in all parts of the buildings above. The quantity of steam admitted to the coils is so regulated as to moderate the heat given out, to the exact requirements of the weather; while, in the summer, no steam at all is admitted, but the fans are kept at work, so that the atmosphere of the buildings is constantly renewed and cooled by the current from below. The engine building being at a distance from the others, there is no danger of fire, and the heat communicated is of the most healthy description. In winter about 120 cubic feet of warm air *to each patient* throughout the whole establishment, is thrown into it *every minute;* and, in warm weather, an equal quantity of fresh air, both day and night.

After some mistakes in construction and an outlay very much enlarged by the fact that the buildings had to be remodeled to such an extent to adapt them to this ventilating machinery, a point has been reached, leaving little, if anything, to be desired, and the details, if not inappropriate to our columns, would be instructive in some respects to every house builder. The same system has since been adopted for the Capitol at Washington, and by more than twenty other public institutions.

With one word farther as to the farming and gardening, we conclude. The value of the crops of 1862 was stated above at $5,358.57, and some may be curious to know what were the main items in this amount, and the rate of valuation at which it was made up. Some of the principal crops were—

Hay, 110 tons, at	$9.00		$990.00
Green Cornstalks, 100 tons,	2.50		250.00
Oats 822 bushels	50		411.00
Potatoes, 2,044 bushels,	31		633.64
Beets, 2,583 bushels,	30		774.90
Onions, 200 bushels,	60		120.00
Carrots, 1,394 bushels	30		418.20
Tomatoes, 257 bushels,	75		192.75
Apples, 306 bushels	37½		114.75
Cabbage, 3,100 head	04		134.00
Celery, 4,023 head	04		160.92
Asparagus, 2,888 bunches,	05		144.40

The remainder is made up of the various garden crops in items of less than $100 each. L. H. T.

DESTROYING APHIDES.

Our readers are aware that we place but little reliance on any remedy for destroying insects, short of killing them at once. Wholesale destruction is desirable where it can be performed, and it is more particularly applicable to the removal of aphides from fruit trees and ornamental shrubbery. In some cases very strong tobacco water has answered the purpose; in others a solution of whale oil soap has proved successful. Probably a mixture of the two would accomplish the object in any case. As whale oil soap is not always at hand, we have found common soap suds generally prove efficient. One year several thousand young fruit trees were thickly infested with aphides; we directed all the soap suds on washing days to be carefully saved, and as little diluted as as practicable, so as to give it its full strength. It was carried along in pails and held under the stems and branches, which were bent over and immersed in it, slightly shaking them so that the insects might become well dosed. It killed them in every instance where this care was taken, but where the work was superficially performed, that is, by merely dipping them in and out again in a moment, a considerable portion escaped. Two or three days diligent work entirely removed the pest from the plantation.

But there are instances where the branches cannot be bent over nor immersed in the suds; a syringe must therefore be employed requiring a large amount of liquid, but proving equally efficient if well used. It is not necessary that a costly instrument be procured for this purpose—a garden engine or hydropult cannot be applied to every corner and hidden leaf so well as a small instrument held in the hand. One may be made by a common tinman, costing altogether not more than one dollar. The end should be perforated with a number of small holes, so as to dash a smart shower on the under side of the leaves, or to any part of the plant. Wherever this mode has failed, it has been owing to the weakness of the solution, or to a want of efficient application.

THE MORGAN HARROW.—JOHN JOHNSTON, who wrote us a few weeks since, speaking of this implement in the highest possible terms, adds in a letter dated June 17th: "The Morgan Harrow don't give me satisfaction on stiff timothy sod; it is entirely too light for that kind of work. It does better when weights are put on it, but in that way it works the same as the Scotch Harrow. When weights are on, it don't vibrate from one side to the other. It is excellent for loose clover sod, or to harrow any land in good condition, and I think cannot be excelled for covering seed."

RAISING ORCHARDS IN THE WEST.

Mark D. Willson, of Dodge county, Wisconsin, who has been quite successful in raising orchards at the West, states the following as the essential particulars of his management:

1st. Planting on knolls or dry ridges and using little or no manure. This causes the trees to grow moderately and to ripen their wood so as to endure the cold of winter. The warm summers and fertile soils at the West, render this more essential than in the Eastern States. The growth of about two feet each season, is a good bearing length—when much exceeding this, a poorer soil should be chosen, and cultivation diminished; when less, the soil should be at once cultivated and enriched.

2d. Trees should be pruned with low heads, the bare trunks not exceeding two and a half or three feet high. Such trees are much less exposed to high winds.

3d. A mound of smooth earth a foot high, is made about each tree late in autumn, to keep off the mice, and several inches of straw spread five or six feet each way about it, to protect the roots from severe freezing. The mound acts as a perfect protection from the mice that are apt to infest this straw. This is equal to a protection of snow, and has been found particularly valuable and essential in raising the dwarf pear at the West, where, with this treatment, trees eight years from planting are now growing with all the health and beauty of form of any in Western New-York.

4th. Selection must be made from the hardiest varieties, upon which experiments have now been pretty fully made, and results given in former volumes of this paper, and in the Illustrated Annual Register.

GARDEN WALKS.

There is no part of gardens or pleasure grounds more expressive of the character of the keeping than the walks. No matter how fine the flower-beds may be, if the walks are not bounded by smooth and graceful curves, or if they are rough, irregular and unfinished, the grounds will convey unmistakably an expression of bad management. But a smooth and perfect walk on the other hand, even if carried through a wild natural shrubbery, imparts a finished air to the whole. These facts should be borne in mind by all owners of ornamental gardens.

Remedies for Ticks on Sheep.

In reply to an inquiry in your paper, as to the best mode of destroying ticks on sheep and lambs, I beg to say that a little paraffine oil, put upon the necks and along the back, at shearing time, is an effectual remedy. I tried it this spring, and it has been most successful, doing no harm to the animals. R. W. *New Brunswick.*

A subscriber asks what will take the ticks from his lambs. Rub brimstone and lard along the back, and the ticks will disappear; or make some tobacco water strong enough to kill a tick, and pour it along the back of the lamb. M. *Springfield, Ohio.*

Cure for Foot-Rot in Sheep.

The Irish Farmer's Gazette gives the following simple remedy: Pare the foot, removing all the jagged and loose bits of horn, and anoint it with butyr of antimony. Repeat it every second or third day, according as the feet are more or less bad.

Preparation of Bone Phosphate.

Eds. Co. Gent.—In answer to an inquiry in your edition of June 4th, I give below my process for preparing bone phosphate. I buy the raw bones at 50 cents per 100 pounds, grind them as fine as possible, sift the coarse from the fine, put the coarse in a cistern, saturate it with water, let it stand about six hours, and then add vitriol—stir it well—then dry it with the fine bone. If not sufficiently dry, add a little wood ashes—100 pounds vitriol to 500 pounds bones.

My phosphate costs me about $24 per ton.

Wilmington, Del. J. PUSEY SMITH.

THE BLACK SQUASH BUG.

Messrs. Editors—In the June Cultivator, J. T. B., Cumberland, Md., inquires for a means for the destruction of the Black Squash Bug. Lay a shingle on each hill—leave the ground rough so they can crawl under—go early in the morning with a dish of water, take up the shingle, and brush the bugs into the water with the hand, as most all of them will be on the under side of the shingle. They go under the shingle at night I suppose, because it is warmer. A hundred hills can be cleaned in this way in a few minutes. When all are collected, pour the contents of the dish on the ground, and as the Irishman said, *leave your foot on their heads.* Repeat the operation as long as the bugs work. The striped bug won't mind the shingle. Jos. E. Phelps. *Worcester, Mass.*

DRIVING BEES---DOUBLING SWARMS.

Messrs. Editors—In the Co. Gent. of the 2d inst., Mr. L. F. Scott, asks how to drive the old stock of bees in with the last swarm issuing. The operation, I think, is a very easy and simple one. Place the hive with the new swarm upon the stand previously occupied by the old one, having removed the old one a few feet from its place. Expel the bees from the old hive, and they will repair to their old stand and enter with the swarm occupying its place.

It should be remembered that this should be done only with the second or third swarm. When the first swarm issues the brood comb is filled with brood in all its stages. To break up the hive at that time a swarm is lost in the brood comb. The second swarm issues when the brood is perfected, again filling the hive with a numerous colony; and also at a time when there are few, if any, eggs deposited by the young queen. But if should be reckoned in the estimate that there are now two young queens, each capable of founding a new colony; and if the swarms are merged in one, one of the two queens perishes. The following questions should be settled previous to breaking up an old stock:

1st. Is the comb so old that it is unfit for brood anothe season? If so,

2d. Which, from the prospect of the latter honey harvest, will secure most profit from the old stock—to let them work until the harvest is closed, and then drive them in with another stock, securing the additional brood from the queen, and whatever honey they may have made through the season, or drive them in at once?

The strength of the issuing swarm also may be considered. One strong swarm may be worth more than two weak ones, or the two may be so strong as to resist the incroachments of the moth and make good swarms. If after weighing the question in all its bearings the owner decides to break up the old swarms, the simple course above recommended will enable him to do so very readily.

It should always be remembered that fumigating the swarm with tobacco smoke will render them harmless in all operations with them. J. Hazen.

Note.—I have a few new swarms of bees which I would like to show to any friend who will please to call on me, on the Delaware turnpike, one-quarter of a mile from Morton-street.

HEDGES FOR THE SHADE.

A friend inquires what the best hedge plants are to grow in the shade of trees. Nothing is better than the hemlock or the Norway spruce. Any one can readily determine before hand what plants will succeed best, by examining the interior of thickly growing bushes. If on turning up the branches, the leaves are found dense and healthy inside, such trees will grow well in the shade; but if the inside leaves are dead or the shoots bare of foliage, they will not succeed. A Buckthorn hedge, for example, is found to have all the leaves outside, and none at all toward to centre; as a necessary consequence, the Buckthorn is one of the worst of all hedges under the shade of trees.

How much Hay does it take to Winter a Cow?

In seasons of extreme scarcity of fodder, like that of 1862 and 1863, the above is an important question. Many farmers are apt to overate their amount of forage and run short before spring opens, at a great loss in the extra price of hay and increased waste and expense in moving it. This might in a measure be obviated if farmers were careful in estimatlng their crop of hay during a series of years, and noting how much a given space of barn room would carry through the winter. It is variously estimated from 1½ to 2 tons to winter a cow. Some years since I weighed the hay fed to fourteen cows for four consecutive weeks, in the months of March and April. It averaged twenty pounds per cow per day. The hay was a good quality of timothy with a sprinkling of clover. Allowing the time of feeding six months, or 180 days, 3,600 pounds would winter a cow. Last spring, in the months of March and April, I tried the experiment of measuring hay in a well settled mow, and found that twenty cows ate 100 cubic feet of hay per day, equal to 400 pounds.

Mexico, July 4, 1863. HIRAM WALKER.

TICKS IN SHEEP.

Messrs. Editors—Under the above head I see a question in your paper, from Mr. John Holt. I would recommend "Lalor's Sheep Dipping Composition"—the same that is advertised in the Co. Gent. I used it with some of my lambs that were troubled with ticks, and it effectually destroyed them. Whether it will have all the other effects claimed for it I am not yet able to say. My lambs are improving very much in condition since the dipping.

FRED. COURTLANDT.

WHAT AILS THE COLTS?

Messrs. Editors—I have just seen two horses, 3 years old, that have each had a sore hind leg, which I think will cut short the life of both. The first, was like a colt with grease or scratches in the heel, which rapidly became an unusual sore, breaking and discharging offensive matter, and being filled with proud flesh. The second cracked across the pastern and down into the hoof, each swelling rapidly, and discharging freely; the second runs at times large quantities of blood, until in danger of bleeding to death before the blood can be stopped. Each colt has a dry hacking cough, and both lose much flesh, and will I think both die; and yet there has been much done for them, even to watching at night. One is a gelding and the other a valuable stallion, on the same farm, and both have been well cared for when in stable and when in pasture. Any information to the owner or myself, would be advantageous to him and gratifying to me. X.

PRESERVING FRUIT.

The modern method of putting up fruit in air-tight jars with little or no sugar, has been so often published that it can hardly be supposed that many good house-wives can be found who do not understand it. But the subject cannot be too often alluded to until every family in the land is induced to lay in a full supply of the various fruits for winter use, with as much certainty as the farmer does his beef and vegetables. Fruit, besides being one of the greatest luxuries, contributes greatly to health, and nothing is more economical as an article of food. This is an age of improvement, and each year's experience suggests something new, either in the manner of closing the jars, or in some equally important part of the process.

From the experience of a number of years in putting up various kinds of fruits, we learn that the less they are cooked the more nearly the natural flavor of the fruit is preserved, provided the heat has been raised to a sufficient degree as to entirely expel all the air contained in the cells of the fruit. Beyond this, cooking is unnecessary. For heating the fruit we have practiced various methods; at first it was scalded in a kettle and then put into the jars, but of late years, particularly with the different berries, our practice has been to put them at once into the jars, and then set them into the water, raising the heat to the boiling point, letting them stand in the water until the contents were thoroughly heat through,—taking the fruit from one of the jars to fill up the shrinkage, or some is scalded in a kettle for this purpose,—and then sealing immediately. By putting the fruit into the jars before they are scalded, it retains its form much better. The most convenient vessel for setting the jars into for scalding that we have tried, is a square tin pan, as large as can be conveniently heated over the stove, say to hold ten or twelve one quart jars at a time, in two rows. The depth of the pan should be nearly equal to the height of the jars. We have learned one lesson by rather costly experience, If the jars set close down upon the bottom of the pan they are very liable to break, owing to the confined air in the cavity at the bottom. To obviate this, a small wire is bent in a zig zag form, so that some portion of the wire will come under the bottom of each jar.

Every year brings out a number of new patents for self-sealing jars. Of the great number of these it is not easy without a trial, to determine which are best. A very convenient kind for closing, and which remains perfectly tight, is known as Lyman's patent. Last season we saw a very simple and economical method practiced, applicable to any kind of jars. It was applied, however, to fruits preserved in about half the usual weight of sugar, something after the old plan of preserving fruits, and the jars closed when not quite so hot as is usual in the modern method of putting up fruits. The jars were closed by simply pasting two thicknesses of strong manilla paper over the neck, after having placed over the fruit in each jar a piece of paper cut to fit the inside. This paper is unsized, such as is used for printing; they kept perfectly. In sealing up fruits while hot, which should always be done, the shrinkage would be more and the pressure on the outside consequently greater. We think a very safe plan would be to apply, first, a piece of strong cloth over the jar, closely pasted around the neck, and then to cover that with two thicknesses of manilla paper, the first extending a little below the edge of the cloth, and the next thickness below the first, so as to be sure to close every passage against the ingress of air; then to the whole apply one or two coats of glue. This would be a simple process that any one could perform, and we have no doubt would be as effectual as any of the patent self-sealers. We have frequently put up tomatoes, and other fruits, in cheap quart jars, such as are sold at 75 cents per dozen, and closed them with nothing but a simple cap of strong cotton cloth, well waxed and firmly bound around the neck with twine, and the whole well coated over with wax; but the binding is a severe operation for the hands, and if the paste and glue will answer the same purpose, cheap jars may be used and the work easily done. H.

THE CULTIVATOR.

ALBANY, N. Y., AUGUST, 1863.

☞Col. L. G. Morris, Ex-President of the State Agricultural Society, and so long and extensively known as a breeder, last week gathered quite a company of his friends at Scarsdale Farm—partly, we venture to presume, for the pleasure of such a gathering, and partly that the trial of a new Self-Raking Reaper might be witnessed under the favorable auspices of so many intelligent and practical judges. The farm itself is worthy of a visit, embracing three hundred and fifty acres out of the not very large area which Westchester county can boast of really excellent farming land, and including at least its full share out of the abundance of beautiful scenery which render the hills of that county more prolific all, of picturesque views and pleasant landscapes, than many of them are of waving grain-fields, or heavy hay-crops. Here, as we shade ourselves, at length, under the full-fruited cherry trees, the tall rye in the next enclosure is our only screen from the waters of the Sound, floating cargoes whose sails overtop the grain; and, as we lose this prospect, in turning, another opens on the eye, stretching across to the Palissades of Rockland and the quiet current of the Hudson.

The machine under trial was the Buckeye Mower adapted as a Reaper, by the addition of a platform and reel, together with a Self-Raking attachment involving some new points, although coming under the Seymour & Morgan principle. The manufacturer, Mr. John P. Adriance, of New York and Poughkeepsie, has already established his Mower in popular favor, and his object in the present combination is to supply such a machine as will be most effective in labor-saving for the use of farmers whose grain land is not sufficiently extensive to warrant the purchase of a Reaper as well as a Mower. The back of the platform receiving the grain, assumes the form of a quadrant, and is swept by a rake which derives its backward and forward motion from an iron arm bent over the inner driving-wheel of the machine, and the upward and downward motion, that gathers and drops the sheaf, from a chain so attached as to draw the teeth down upon the platform just behind the knives, and lift them to release their burden when it has been swung back over the vacant ground. It has not been in operation long enough to secure the entire adaptation of all its parts to every variety of grain, but is characterized, like the Mower itself, with a degree of simplicity and ready control on the part of the driver, which appear to require but a little farther experience in the field to render it equally efficient for the purpose designed.

The crop on which it was tried was the field of Rye already referred to, very long and heavy in straw, and considerably tangled in growth. It was a test of the most severe kind, but, with some slight modifications as suggested above, to fit the raking apparatus to the extreme length of the grain, (between six and seven feet throughout) and to strike the teeth somewhat more forcibly into the straw—the spring not having quite effect enough for such heavy and tangled bundles,—the work would have been successfully performed; and the machine as it was, would, probably, have done good execution in the shorter straw of wheat or oats, if there had been any ready for cutting. We understood, moreover, that the machine had never been in operation before that day—the weather immediately preceding having prevented the preparatory experiments which Mr. Adriance expected to make.

A mowing machine of Allen's patent, and subsequently one of the "Buckeyes," were also tried in a meadow adjoining,—both with the usually satisfactory results.

In the evening we had a charming drive to Fordham, and the next morning took the Harlem train for White Plains, where we spent some hours with Messrs. Edw. G. and Samuel Faile, in looking over the farm of the latter gentleman, the improvements upon which have already been referred to in these columns. The change which has been effected since this farm came into the hands of its present proprietor, is almost beyond belief; since our own acquaintance with it began, which was after a considerable beginning had already been made, the progress effected has been very great. It affords, as we have stated before, one of the most perfect and thorough examples of underdraining in the country, and as such alone is a study to the farmer; while the amelioration of the soil, after draining, by the course of culture adopted previous to seeding down, including deeper plowing and a liberal application of bone-dust, is rapidly increasing the product obtained.

Out of the not quite 300 acres, there are this year about 125 to harvest—75 or 80 of hay, and the remainder in the various grain and root crops; and while the season has been too dry to give perhaps a fair average yield, the crops now harvesting are generally quite heavy. The standing oats are the best we have seen; the rye, like that at Col. Morris', is very large and heavy, and the wheat is as good if not better, than we have seen in the river counties. In dressing the fields of rye and wheat last autumn with bone dust, one strip in each, a rod or so in width, was left without any application of the bone; the object being to ascertain how far the first crop alone would go to pay the $12 or $14 per acre which the bone dust has cost. These strips had now the appearance of vacant lanes through the field—the straggling grain they contained was not only very thin, but much behind the rest in maturity, and could not have yielded at the rate of five bushels to the acre, while the rest of the fields will vary we presume from 20 to 30 bushels. But this is not all; the clover growing with the grain shows quite as great a difference in favor of the bone dust as that does, both in size and thickness. Thus the effect of this application may be expected to continue several years, while even the first harvest gives a profit upon it.

In the afternoon we returned with E. G. Faile, Esq., to West Farms, and had the pleasure of a call at the place of William Watson, Esq., well known among breeders of Ayrshires for his importations of these useful cattle. He has now quite a herd, including some very perfect examples of the breed. Mr. W. has also imported and bred Shetland ponies in considerable numbers, the demand for which, as well as for the Ayrshires, keeps fully up with the supply. The ponies are beautiful little creatures, either as pets and curiosities, or for the use of the advancing generation. Mr. Watson's gardens and grounds are very complete; and the mansion, erected two or three years ago, is one of the largest and most costly, as well as of the most perfect, in the taste displayed and the conveniences obtained, throughout a region dotted all over with extensive and elegant villas.

Mr. Faile's admirable herd of Devons, we should add in conclusion, continues to receive the attention it has always had, and to thrive as well as ever. L. H. T.

☞ It is with deep regret that we note the fall, during the battle of the 3d inst., at Gettysburgh, of Col. E. SHERRILL, late of Geneva. Among the many who have gone into the service of their country since the beginning of the present war, we know of none actuated more purely by feelings of patriotism and duty, and few if any whose loss would be felt more deeply by their friends. Col. S. had retired within a few years past from active business, to devote himself mainly to the pleasures of country life; he was earnestly engrossed in the improvement of one of the best farms in the vicinity of Geneva, which had suffered somewhat from neglect, but which he was rapidly bringing to a high state of cultivation, and his business habits and practical sagacity led us to anticipate that it might ere long become one of the model farms of the State. He had served some time on the Executive Board of the State Agricultural Society, where his voice was ever regarded with respect. When the President's call for troops was issued, a little more than a year ago, it became evident that volunteering must be encouraged by the example of those whose age and position might otherwise have allowed them to hope for exemption from active service; and Col. S., at the urgent request of those who knew how far his name and character would go, accepted the command of the regiment to be formed in his district, and with his co-operation it soon came into the field. It was ordered to Harper's Ferry, and had scarcely reached that post, when an attack was made, resulting in the ultimate surrender of the place, and, in the brave effort to rally our retreating men, Col. S. was seriously and as at first supposed fatally wounded. It was long before he regained his usual health, but he was impatient to take the field again, and has now fallen—dying, as he lived, a model of fidelity and courage to the Christian Patriot. Col. S. had been a member of Congress as long ago as 1845, and was about 50 years of age.

☞ A number of invitations to visit different parts of this and other States, have been received during the present season, only a small part of which we have been able to accept. It is due to our friends, however, that we should acknowledge their many polite offers of hospitality and assistance in such agricultural excursions. It is always a source of pleasure to us, personally, to make the acquaintance of our subscribers, and it is no less as a gratification than as a professional duty, so to speak, that we are glad to take every opportunity of extending our observations among them,—of understanding more thoroughly both the systems of practice they pursue, and the natural advantages of their different localities. If the notes of such journeys fail to add very materially to the general stock of practical knowledge, they seem designed at least to promote a sort of sociability in the circle of our readers, and to carry somewhat of the recreation of travel to those whose duties confine them more closely at home, and who are thus obliged to avail themselves of the very imperfect medium of another's eyes, in order to obtain very frequent glimpses of what lies beyond their own farms and gardens and neighborhoods.

It is not, therefore, from any lack of appreciation or intentional neglect, that some of the invitations that have come to us, have been unacknowledged or unaccepted. Sometimes they have been laid aside in the hope that the course of events might render an acceptance possible, until so long an interval has elapsed, that an answer seemed rather like an aggravation than a courtesy. There are large portions of the country, including many of its best farming districts, which we have not yet been able to see, at least in detail; and there are others, possessing less fertility, and perhaps fewer attractions to the casual traveller, where the improvement attained deserves equal credit and is equally worthy of study. The field for examination is thus a very wide one, and it will continue to be our aim to make such inroads upon it, from time to time, as other engagements may permit, and to avail ourselves toward that end, whenever it is possible, of such co-operation as may be proffered.

☞ The Agricultural College at Cirencester, England, which is considered by many as the model institution of the kind in Great Britain or any other country, has lately re-organized its corps of instructors, parting with the services of Dr. Voelcker, Profs. Coleman, Brown and others, but filling their places with a new staff who will impart greater vigor and efficiency, as its management claim, than have heretofore characterized its course. Whether these anticipations are to be realized or not, there is a new feature to be adopted which will attract attention, and to which we refer because it is in some respects quite analogous to the Agricultural Lecture Course given here, at the Yale Scientific School at New-Haven, in the winter of 1860—a project then intended for annual repetition, but interrupted by the breaking out of the present war.

Beside the regular instructors at Cirencester, there is to be an autumnal series of lectures before the students, by a number of gentleman not connected with the institution, and all of them of high standing in different departments of agricultural science or practice. Among them we notice the following:

On Farm Implements,	Mr. SCOTT BURN.
On Crop Cultivation,	Mr. BALDWIN of Glasnevin.
On Land Drainage,	Mr. BAILEY DENTON.
On Tillage,	Mr. J. C. MORTON.
On Manures,	Mr. ROBERT RUSSELL.
On Seeding Corn Crops,	Mr. HEWITT DAVIS.

And on the history, &c., of the different breeds of Live Stock, Capt. TANNER DAVY, editor of the Devon Herd Book, Mr. DUCKHAM, Editor of the Hereford Herd Book, and others are to assist. The London Agricultural Gazette remarks: "It is certain that the various thought and even the conflicting opinion which may thus be uttered in the hearing of agricultural students will be a truer picture of the various agricultural experience they will hereafter, each for himself, realize, than could be obtained from any single tale, however complete and logically consistent it might be."

☞ We are indebted to the publishers, Messrs. D. Appleton & Co., New-York, for a copy of "The Natural Laws of Husbandry," by JUSTUS VON LIEBIG, edited by Dr. John Blyth, Professor of Chemistry in Queen's College, Cork. At an early opportunity this work will be reviewed at length in our columns. Meantime those desiring to procure it, can address the publishers as above.

☞ During our last week's journey a friend inquired the comparative prices of English and American cheese in the London market—a question which at the moment we were unable to answer. The following are the quotations of the Mark Lane Express of June 8th:

CHEESE, per cwt.	s.	s.	CHEESE, per cwt.	s.	s.
Cheshire	56	@75	Cheddar	60	@75
Double Gloucester	58	64	American	40	@54

We think it is only within a comparatively short time that quotations of American cheese have appeared on the list; in turning over volumes of the London Farmers' Magazine, we find no mention of it down to September, 1861, since which date we have no file at hand.

☞ Our sagacious contemporary, the London *Mark Lane Express*, although it devotes more space to prophecies about the Weather, than to those about the future exportations of Grain from this country—still continues the latter at intermittent periods. If its correspondents don't foresee coming storms and calms with any greater accuracy than the editors do coming cargoes of wheat and flour, the science of meteorology can hardly gain favor very rapidly among its readers.

In an article in the COUNTRY GENTLEMAN of Dec. 11th, 1862, we referred to this subject, and showed how the journal above mentioned had repeatedly asserted that "that unhappy country so lately called the United States" could no longer produce much, if any, breadstuffs for shipment. In May, 1861, it pronounced authoritatively that Great Britain had "America no longer to depend on;" in July, 1861, it said that "for the present year, certainly, the American market may be looked upon as a very *limited one indeed.*" By the end of September, shipments being still maintained in large quantities, the evil day was adjourned; we had not kept our crop of the preceding year at home for use, but we surely could have raised nothing of any account in 1861, and *this* was "*the last year*" that England might expect to see any considerable amount of American grain landed on her shores.

All this (and much more) was in the face of reports in this paper and elsewhere proving exactly the contrary. The results in 1862 we give below from the columns of the *Express* itself, under date of June 15th, 1863:

"According to the returns of the Board of Trade, the importations of wheat in 1862 amounted to 9,469,270 quarters; and of flour, to 7,207,113 cwts., equal to 2,059,175 quarters; making an aggregate of 11,528,445 quarters, being nearly three millions above the largest quantity imported in any previous year. From the United States alone the quantity received amounted to 5,010,351 qrs, [40,082,808 bushels] namely 3,724,770 qrs. of wheat, and 4,499,534 cwts. of flour, equal to 1,285,581 qrs. of wheat, *such an importation as was never before received from thence.*"

The same article, however, not discouraged at the complete refutation of all previous predictions by the facts just recorded, indulges again, with reference to 1863, in almost exactly the language it has used at short intervals for two years past, as to the crops of 1861 and 1862: "As to the importations, *we cannot expect a large amount from the United States.* Not only has the war devastated a great extent of the wheat-growing districts of that country, but the rural or agricultural population have been so reduced by drafts for the army, that in many parts there are not left hands enough to cultivate the land. Such interference with the regular processes of agriculture will have a material effect upon production."

We cannot deny that some effect has been felt by our "agricultural population," resulting from the "drafts for the army," but we are quite unaware that a single acre "of the wheat growing districts" which have ever exported their products to Great Britain, has been "devastated" by the war or by any other cause. Is it ignorance of the country, or a desire to misrepresent it, which leads to such statements? Even now that we have a rebel force in Pennsylvania, sending southward what are doubtless most important supplies for the famishing forces of rebellion, we are losing nothing that will be missed, here or in England, when the grand aggregate of the crop of 1863 comes to be made up. Of course we must not speak too confidently of what is as yet a matter for the future to determine decisively; but,—with such reductions of labor as may have taken place—with such injury as the drouth of the past few weeks may *in some localities* have accomplished,—if a kind Providence continues the measure of favor with which the season has thus far been reached, until the harvest is safely housed, we shall not run much risk in promising our London friends in Mark Lane—perhaps not the enormous quantities of wheat and flour we sent them in 1862—but an amount fully equal to the average of the past five or six years. The *Mark Lane Express* calculates that, however good English crops may be, that country must import at least five million quarters of wheat the coming season; and we think we have good grounds for hoping to be able to supply *at least one-half or two-thirds* the quantity from "the late United States" alone.

☞ The Wheat Show, noticed by us some weeks ago as in contemplation at Rochester, is now definitely announced to take place Sept. 8–10—under the auspices of the Monroe County Agricultural Society. The following premiums are offered:

For the Best 20 bushels of White Winter Wheat	$150.00
For the Second Best do. do.	75.00
For the Best 20 bushels Red Winter Wheat	100.00
For the Second Best do. do.	50.00
For the Best 2 bushels White Winter Wheat	50.00
For the Second Best do. do.	25.00
For the Best 2 bushels Red Winter Wheat	40.00
For the Second Best do. do.	20.00
For the Best 2 bushels Spring Wheat	20.00
For the Second Best do. do.	10.00

"Competitors for these Prizes will be required to furnish samples of the wheat in the ear and with the straw attached, (say 50 ears of wheat and straw,) also to furnish a written statement of the nature of the soil on which the wheat grew, method of cultivation, time of sowing, quantity of seed sown, manures (if any used,) and mode and time of application; also the time of ripening and harvesting, and the yield per acre, with such other particulars as may be deemed of practical importance; also the name by which the variety is known in the locality where it was grown. The Wheat must be one variety, pure, and unmixed. The prize to be awarded to the actual grower of the wheat, and the wheat which takes a prize is to become the property of the Society."

As competition is open to all parts of the United States and British Provinces, we trust that the liberal prizes offered will elicit some of the best Wheat grown in all the different localities in which it is the staple crop. Mr. Jos. HARRIS, President of the Monroe Co. Ag. Society, in announcing the prize list—the money for which has been subscribed in Western New-York—remarks: "We have never yet had a good Wheat Show in the United States. It is highly important that the wheat growers of the country should meet together and compare samples of wheat raised in different sections. The holding of the Fair has been fixed so as to enable farmers to purchase their seed from the wheat entered for competition. A change of seed is always desirable, and it is believed that all the wheat of good quality sent to the fair will find purchasers at a high price."

☞ It was our intention sooner to have referred to the Advertisement of "Fickardt's Cattle Powder" which has now appeared some time in this paper. It is prepared by WILLIAM RALSTON of Philadelphia, who sends us high testimonials in its favor. We are informed that Dr. G. EMERSON, editor of the American Farmer's Encyclopedia, in whose judgment we should place much confidence, has tested it satisfactorily, and uses it on his own farm. We are promised a sample for experiment, and shall endeavor to give it a fair trial and report the result.

Inquiries and Answers.

GERMINATING CHERRY STONES.—Will you inform me how to manage cherry and mahaleb seeds, to make them grow? What time should they be planted? I buried some last fall about two inches in the ground, and planted them this spring, but none grew. T. J. SEEVERS. *Iowa.* [The seeds, in this instance, may have been properly kept and planted, but as often happens, were probably dried too much previously for germination—or possibly they may not have been fully ripe. To preserve the seeds of cherries, the pulp should be first washed away, and the stones then mixed with slightly moist sand. If intended to send to a distance, the sand would be too heavy; and the stones must be therefore dried enough to prevent heating or moulding. The drying should be done in the shade and not be continued a day beyond the time necessary for drying the surface. If continued several weeks, the stones will not grow. They should be kept over winter in moist sand, exposed to freezing and thawing, and planted very early.]

SHINGLING ROOFS.—I would like to know when is the best time to lay a roof—in the old or new moon, to keep the shingles from springing, or whether the moon is the cause of their springing or not? H. E. ASHLEY. [Happily the innocent moon has nothing to do with the matter, and the best time is when the operator has a good supply of excellent shingles and fine weather before him. The warping is owing to the use of warping timber, or to laying unseasoned shingles. Dipping them in limewash before laying will greatly increase their durability, by hardening the surface, and preventing the growth of moss.]

SEEDING WITH CLOVER—Will clover seed do any better if sown in the fall than in the spring? LOCKPORT. [If clover seed is sown in autumn in the northern States, the young plants do not get a sufficient foot-hold during the same season, and are liable to be winter killed. Very early in spring is therefore the best time.]

MILLET.—When is the best time to harvest Hungarian grass? LOCKPORT. [We have not had experience with the Hungarian grass, but suppose the best time for cutting to be as the seed approaches maturity, and while most of the stalks and leaves are yet green.]

CLOVER SEED.—Please to inform me whether the Pea-vine clover should be cut for hay early and the second crop left for seed, when seed is the main object, or the first growth left for seed. S. [Cutting the first crop for hay, and leaving the second for seed, is the most approved practice; but as the pea-vine variety does not ripen as early as the common clover, it should be cut early in the season, or what may perhaps be better under the circumstances, pastured very closely early in summer, and then allowed to grow up for the seed crop.]

"BEAUTIFUL MICROSCOPE"—Enclosed please find one of those "beautiful microscopes," magnifying 500 times for 28 cts., coin preferred. If it is not a humbug, I should be glad to know what it is. Please tell your readers what you think of it? S. E. M. *Mansfield, Pa.* [The microscope sent by our correspondent, is a globule of glass, one-sixth of an inch in diameter, set in a piece of thick sheet lead, of an oval form, an inch wide, and an inch and a fourth long, and weighing a quarter of an ounce. This is all that came to us The glass globule acts as a magnifier. Its focal length being about one-tenth of an inch, it magnifies dimly the diameter about 60 times, and the surface about 3600 hundred times. It is only a curiosity; it is of no practical value as a microscope—for being of globular shape, it must be placed almost in contact with the object viewed, and requires practice and skill to use it at all. The globule was evidently made by melting and dropping like shot—as is evident by the small *scar* on one side, towards which the globule slightly tapers, and it is not very clear and transparent. A pound of lead would make about 60 such microscopes, and the glass globules could probably be made at the rate of several hundred for a dollar—but manufacturers must have something for their trouble and expense.]

SPROUTS FROM APPLE TREES.—I have some apple trees that have been set out five years, and some of them sprout up from the roots every year, three to fifteen inches from the body of the tree. They receive clean careful cultivation and I do not think any of the roots have been bruised. Can you tell me what is the cause of their sprouting up, and how to stop the same? J. E. P. *Worcester, Mass.* [Some varieties or stocks naturally sprout more freely than others. Doubtless the one mentioned happens to possess this characteristic in a high degree. The best remedy will be to grub up the sprouts as fast as they appear until they cease to grow. This will not require a great deal of labor, nor have to be repeated a great many times.]

CANNING PEAS.—Will you have the kindness to inform me through the columns of the COUNTRY GENTLEMAN, how to *can Green Peas?* This insertion would confer a great favor to many friends of your valuable paper in this vicinity. We tried them the same as ripe fruit last year, but failed. M. E. C. [Will some of our readers who have been successful with canning peas, please give us clear, distinct, and condensed directions, with all the requisites—also for canning the different fruits?]

SHEEP.—Brother farmers, will you please communicate through the papers, your different ways of marking sheep, and also how to kill ticks on them? Tobacco water is recommended by some—state how to prepare it, what quantity, &c, for 50 lambs? LOCKPORT.

☞ Will some one tell me what is the cause of wool falling off the sheep? M.

THE PARTRIDGE.—I have just caught two young partridges just large enough to fly. Will you or some of your correspondents, tell me through your columns, just as soon as possible, how to tame them—whether anybody ever has tamed them and kept them with hens that were not at all confined in a poultry house? Also, what shall I feed them on? How shall I prevent them from flying away? A neighbor says that, though almost everything else can be tamed, partridges cannot. Now I think it very strange if nobody has succeeded. I hope for a speedy answer, as I fear they will die before long, under my ignorant, inexperienced care of them. G. M. *Newtown, Conn.* [We do not remember to have heard of an instance where the partridge has been domesticated. If any of our readers can throw any light upon the subject, we shall be pleased to hear from them.]

CAKED BAG.—Mr. J. Miller inquires about a remedy for caked bag in cows. We have recently had a similar case, which gave us much trouble. Neither the calf nor our own efforts could do any good until we applied the following: Take a piece of *Polk root*, say one inch square, cut or grate fine and mix into a pail of slops, and give once a day (evening.) At the same time take, say half teacupful of *fresh dug* earth, and a tablespoonful of lard—mix the earth and lard well together, and rub the bag gently but well. Continue both for 4 or 5 days; then wait say 9 days, and if it is not entirely removed, apply the same as before. It is proper to say that it has been but a few days since we tried the above; so far it appears to do the business effectually.

Newark, O. R.

SCOURS IN LAMBS.—I lost many last year's lambs the past winter with the scours, owing, as I think, to our open winter, and their feeding on dead grass, &c. All the usual remedies—astringents, antacids, &c, failed me. After a few days the hind legs became stiff, and in two or three days from that time they died. Can you suggest a remedy or indicate the cause? I have good shelter and an abundance of clover hay for feed. J. M. D. *Pennsylvania.*

SEEDING TO GRASS.—I have a low land meadow which I am anxious to seed to red top grass. If it was plowed up directly after haying, would the seed take so that I could get a crop of grass next year, or would it be better to turn it over in the spring and sow the grass seed with oats? I should like to have your opinion on the subject, as well as some others who have had some experience on the subject? C. H. H. *Bridgwater, June* 26. [Grass seed may be sown at the close of summer, or early in autumn, to great advantage, if the soil is moist enough, or if there have been sufficient rains. We have often sowed timothy in this way with great success, obtaining good crops the following season. Seeding down with oats is always uncertain—it sometimes does well, but more commonly partially fails. It is better to seed with a thin crop of barley in spring, or with spring wheat.]

CREEPER FOR STONE-WALL.—Will you or some of your correspondents inform me through your paper where and what kind of Ivy to get to plant along a stone-wall about three and a half feet high? The wall is built along the public road or street in our village, and is about three hundred and fifty feet long. If there is nothing like an ivy, what would be suitable? I want to get something that will grow up the sides and along the top. What will do best? Let some one interested answer. J. H. *Geneva, Ill.* [The English ivy, which forms so beautiful a covering to stone-walls, is too tender for that climate. One of the best substitutes is the Virginia creeper, sometimes called the American ivy, (*Ampelopsis* of botanists;) the wild Michigan rose is another beautiful plant, especially when in bloom, which may be used for the same purpose; also the Trumpet creeper or *Bignonia radicans*.]

OKRA.—I would be glad if, through your paper, I could learn what use, and how to use the green pods of the okra. C. HAWLEY. [Mr. Buist says—"The green seed pods are put into soups, or stewed and served up with butter. It is becoming very popular with us, and grown to a great extent by some gardeners for supplying the market."]

MILLET.—My experience and observation in cutting millet for hay, is to cut it while the seed is in the milk. C. H.

DOMESTICATING THE PARTRIDGE.—I see a notice in your paper under the signature of G. M., Newtown, requesting some information with regard to raising and domesticating young partridges. I had a young partridge given to me during the summer of 1861, and procured three young Guineas for company for it, and kept them in a bird-cage while young, with a miniature bench with feathers placed in it as a covering for them day and night; their feed consisted of dead flies, which proved sufficient for them, and as they grew we let them out, and the partridge was thoroughly domesticated, and would come any time we called it to eat its feed out of our hands; but after it had grown to a full-sized partridge, it would make long absences, and the next spring it brought a flock of seventeen to the house, but they were wild and run away. IRENE DARLINGTON. *East Bradford, Pa.*

FATAL DISEASE IN PIGS.—A singular disease has broken out among the swine in this neighborhood. One of my neighbors lost nearly two hundred very fine pigs. The pigs were taken when three or four weeks old—the eyes and jaws would swell, and in a day or two the jaws became very porous, quite like a honeycomb. They would last a week or two in this condition. Every remedy proved unavailing. Can you or your readers enlighten us as to the disease, its cause, and its cure? J. E. M. *Bushnell, Ill.*

POTATO-DIGGER.—There is much inquiry for a good potato-digging machine, and as the season for digging potatoes is fast approaching. I would suggest that those having machines will favor themselves as well as the public by advertising the same. L. D. *Albany.*

HOW TO MAKE CHAMPAGNE CIDER.

In reply to an inquiry from a subscriber at Sonora, California, we republish the following directions furnished to the Co. GENT. some years ago, by Mr. JAS. LEVESQUE of the Island of Jersey:

After the apples are crushed, press out the juice, put in a clean cask and leave out the bung. It will work without anything being put in; in four or five days, draw off, and put into another clean cask. Do this three or four times, allowing as many days between each changing. It does not work well in cloudy weather and so must be left longer. If it does not fine well, it will not keep sweet. To assist the fineing, dissolve 6 ounces of gelatine for each hogshead and mix; do this previous to the last change of cask.

The quality of cider depends on the sort of apples used. Two parts sour apples and one part sweet will make good cider.

Now observe, let there be no time lost in the whole process, but allow sufficient time to do it well. It is the particles of pulp left in the cider that causes it to turn sour. To effect the proper clarifying and working, it will require four changes of cask, that is if you want first rate cider. Do not put any water in any part of the process—have all juice.

After the last change, the cider may remain in the cask, bunged up two or three months. You can then bottle off—lay the bottles down in a cold dark cellar—some will burst, but then you must put up with it. It will be fit to use during the summer, when all parts of the work have been well done. The bottled cider will be equal to champagne, and will keep sweet. Some put brandy, rum, gin, or other spirits in—it does not preserve it, but only makes it intoxicating.

If you can get pineapples *very cheap*, two or three crushed up in each hogshead of juice will be a great improvement. If you keep the cider in casks, be sure that they are sound and air-tight, and very clean. Wash out with cold water, then scald out your cask—fumigate with rag of sulphur—melt the sulphur and then dip the rag in; a piece about one foot square will be sufficient for a hogshead—light the rag and then put it in the hogshead—leave out the spile peg only. This will destroy all must or mildew, or any other bad taste in the cask.

Thousands of pipes are exported from this island annually.

Preserving Fruit in Cold Air.

A late number of the *Gardener's Monthly* contains a report of the experiments of Fletcher, Williams, and Van Camp, of Indianapolis, with Nice's patented method of preserving fruit in air kept by ice within a few degrees of freezing, and rendered dry by chloride of calcium. About a thousand bushels of apples were experimented upon the first winter. They kept till the following June in perfect condition. The following summer small fruits were tried. Raspberries and blackberries kept eight weeks, and then lost their flavor without decaying. Peaches, after ten weeks, showed evidences of decay. Gooseberries, currants and cherries kept much longer. Of pears, two hundred and fifty bushels were tried, of such sorts as Bartlett, Seckel and Flemish Beauty, which, it is thought, may keep the winter through. Grapes, as might be expected, kept a year, but they should, of course, be well grown and thoroughly ripened.

FREAK OF NATURE.—Mr. N. W. Gray of Coventry, Vt., has exhibited one of the most remarkable specimens of the mutton genus ever seen. The first born of one of his flock was a lamb, with one head, two eyes, three ears, one directly in the top and centre of the head, four fore legs, set in pairs directly opposite each other, two bodies united at the brisket, four hind legs, and two tails. The lambkin had but one heart, one pair of lungs, and lived only two hours.

The Grapevine Beetle and Rose Bug.

EDS. CO. GENT.—Enclosed I send you two different species of bugs that made their appearance in this county this spring for the first time.

The green bug made its appearance first, and attacked our grapevines in the eye or bud when they first began to swell, and would eat out the whole bud and destroy it, and it was with great difficulty that we saved a portion of our grapes by battling and destroying them.

When the portion that we saved from the ravages of the green bug began to bloom, the larger or the brown bug made its appearance by thousands, and attacked them in the blossom, and when out of blossom still destroying the young grapes when almost half grown. My object in forwarding the bugs to you is to know from you or your state entomologist, whether they are common in your section of country; if so, do they destroy the grape there as here, (they are new to us?) If they increase here, we may give up raising grapes. You will please give us some light upon the subject if you know anything about them or their origin.

We have another species of bug here similar to the seventeen year locust, but only about one-third the size, with a long sharp horn on the back of the head or neck about one-quarter of an inch in length. If they sting any limb on a young apple tree to the size of two inches and under, all the limb above the puncture will be dead in twenty-four hours. I have never seen either the bug or their manner of destruction of fruit trees described in any writings or print that I have ever read, only once, about two years ago, I read a piece in the American Farmer of Baltimore, written by a gentleman in East Tennessee, about something destroying his fruit trees, and he did not know whether it was an insect or the fire blight, but I was satisfied when I read the article that it was caused by this same insect.

As soon as I can get one of them I will send you one to examine it.

Cumberland, Md., July 7, 1863. P. DONAHOE.

The "green bug" spoken of by Mr. Donahoe, is the GRAPEVINE FLEA-BEETLE, *Haltica chalybea* of Illiger, of which in different parts of New-York State there has been great complaint the past and present year, it eating out and destroying the young buds of the grape in the same manner here as in Maryland. A notice of it was recently given in the COUNTRY GENTLEMAN, June 4th.

The larger buff yellow beetle is the notorious ROSE-BUG, *Macrodactylus subspinosus* of Fabricius, the *M. angustatus* of Beauvois and of Dr. Le Conte, who erroneously, as I think, supposes the *subspinosus* to be another species, the *barbatus* of my manuscripts. In Saratoga county, N. Y., this Rose-bug has this year appeared in immense numbers, destroying the young plants of Indian corn in the fields, and, as I am informed, completely stripping the leaves and fruit from the grapevines in some of the gardens at Saratoga Springs. I have given a full account of this insect in the Transactions of our State Ag. Society, 1855, pp. 477—484, and have heretofore noticed it in the COUNTRY GENTLEMAN, 1856, vol. viii, p. 75, and again in August, 1859.

I do not recognize the insect which is last alluded to in Mr. D.'s letter, from the statements there made, and shall be very glad to receive specimens of it, whereby, I doubt not, I shall be able to inform him what it is. A. FITCH.

How to Cook Vegetable Oyster.

The way I cook vegetable oysters is to clean them and slice them, and boil in water about 20 minutes; then add half as much milk, and let it boil up and take off and season and use just as you would oysters. Put in butter, pepper, salt and crackers or bread. C. HAWLEY.

Profits of Poultry Keeping.

MESSRS. EDITORS—Having often seen in THE CULTIVATOR, the experience and recommendations of different persons, in regard to the keeping of hens and the profits derived thereby, in solution of the question as to whether it can be made profitable or not, I am tempted to give my experience in the business for one year.

I commenend April, 1862, with eleven hens. They were a cross between the Leghorn, Black Spanish and Bolton Greys. I kept them shut up through the summer, and they run out in the winter. They raised but 15 chickens; the balance of the time I kept them laying. The result is as follows:

1863.	Dr.	Cr.
April 22d—11 hens, 2s.	$3.67	
Feed for the year,	12.30	
Chickens and eggs sold,	....	$19.04
1863, April 22d—12 Hens on hand, 2s.		4.00
		$23.04
		15.97
Net profits on 11 hens,		$7.07

I fed them on corn, oats and meal, and in the winter occasionally on "scraps" obtained from the butcher, as a substitute for meat. I think they would have laid better if they could run at large through the warm season of the year.

Ashaway, R. I., July 9th, 1863. L. KENYON.

TRIAL OF MOWERS.—A trial of mowers took place at Hurstville, near Albany, on Thursday, the 9th inst., under the auspices of the Albany County Agricultural Society. The ground was level, and the grass (timothy) in good condition. There was quite a large attendance, (between two and three hundred) of interested spectators. The machines entered for competition were eight, viz., Shipman's, manufactured by Shipman & Son, Springfield Centre, Otsego Co.; the Farmer, manufactured by Parmenter & Bramwell, Troy; the Monitor, manufactured by F. Nishwitz, Williamsburgh, N. Y.; the Hubbard Light Mower, manufactured by C. Tompkins, Troy; Wood's Prize Mower, manufactured by Walter A. Wood, Hoosick Falls; Hallenbeck's Mower, manufactured by Hallenbeck & Cunningham, Albany; the Buckeye, manufactured by J. P. Adriance, Poughkeepsie, and the Union Mower, manufactured by the Union Mowing Machine Company, Worcester, Mass. The ground having been previously divided into eight equal portions, (one-half acre each,) the owners drew for their respective stations. All started together at a given signal. The first machine to complete its task was the Farmer, time about twenty-one minutes. We have not yet received the judges' report, and hence are not aware how the prizes were awarded.

Beside the mowers, two other agricultural implements were exhibited; a Double Mold Board Hilling Plow, by R. L. Betts, Troy, and Palmer's Horse Hay Fork, by Van Allen & Pratt, Albany county.

THE BABRAHAM SHORT HORNS.—The remainder of the Short-Horn herd of the late Mr. Jonas Webb was disposed of on Wednesday, June 24, by Mr. Strafford and Mr. J. Carter Jonas. The "crack" lot of the day proved to be Lord Chancellor, a splendid red bull, calved May 8, 1861. For this there was an animated competition, and the biddings were run up to 400 guineas, Mr. R. Sharp, from the neighborhood of East Grinstead, Sussex, becoming the purchaser at that heavy price. First Fruits, another celebrated bull, went for 170 guineas to Mr. J. Odams. Mr. Clarke Irving from Australia, and Herr Fischer and Herr Gebhardt from Germany, were also among the purchasers, the latter two principally taking cows and heifers. The cows and heifers offered made £2,233, and the bulls £1,222, making a total of £3,455. Including the lots disposed of in April, the entire herd realized £8,027. The flock of South-Downs which conferred such deserved celebrity on Mr. Webb realised £16,000, so that altogether about £24,000 has been derived from the dispersal of his choice animals.—*Bell's Messenger.*

FENCING AND PASTURING.

The time has not come when fences can, in this country, be dispensed with; but it is well to count the cost of them, and their advantages.

The common rail fence, where chestnut rails are plenty, costs about a dollar per rod, as at six rails high it requires ten rails to a rod. Good chestnut rails will last 50 years, and a fence made of new rails will need but little repairs for 25 years. To fence a farm into square fields of 10 acres requires 80 rods to a field, or $8 per acre. Including annual repairs, we may call the cost of fencing a farm in 10 acre fields $10 per acre. In many parts of the State, and with some other kinds of fence it would be more. If divided into fields of 40 acres each, the cost of fence per acre would be but half as much.

At the lowest figure the cost of fencing in the whole country is enormous, but the cost of keeping stock without fences would be greater. Let a farmer imagine himself mowing all his pastures, and carrying the grass to his cattle and sheep. In what proportion of the pasture lands of the State would the grass fill his scythe? Indeed, what proportion is it that could not be mowed at all? I know the advocates of soiling would have all the lands so fertile as to cut two tons of hay per acre, and so smooth that the mowing machine can be used on every part. Let that come to pass as soon as possible.

At present it costs in the whole State I suppose not less than $10 per acre, to fence the land, which is 70 cents per annum. This cannot be avoided at present, and is vastly less than soiling would be.

By dividing the land into small fields the cost is increased, but in a mixed husbandry, and where a variety of stock is kept, and there is a variety of soil, it is desirable that there should be a considerable number of fields. I should think a hundred acres should be in as many as ten fields, and even two hundred acres in a farm may well be divided into fields of ten acres, on account of a suitable rotation of crops, and also for the superior advantages of pasturing. It is supposed that fatting cattle and also cows will do better to have their pasture all in one field. I think this may be so if there is plenty of feed, but is sometimes wasteful, as the rank grass in the richer places will be left, and those places grow richer, while the poorer places, being gnawed closer, will grow poorer. On cultivated land that has been recently seeded, it is better to feed off the grass as quick as possible, after it has sufficient growth to turn in the stock. My practice is to let it get a good growth, then turn in stock enough to eat it off in a short time, first cattle, then sheep, and feed as close as the stock will bear; then take off all stock till there is another good growth. All parts of the field will be fed, and the poorer parts, if any, will become shaded by the new growth, and not suffer by being kept continually bare. This method gives three or four good grass crops in a season. These fields should not be pastured close in the fall.

This method is evidently better for new seeded land, and I think it is better for all pastures, as it gives more forage, and tends more to the general improvement of the land. And I am not sure but it is as well for the stock on a given number of acres.

To follow this plan it is necessary that the land should be divided into a considerable number of fields, the additional expense of which will be paid by the increased amount of forage. N. Reed.

Live and Dead Weight of Sheep.—The English rule is to weigh sheep when fasted, and divide the weight by 7 and call it quarters. Thus, a sheep weighing 140 pounds would give 20 pounds a quarter as the dead weight. If the sheep are in good condition this rule is sufficiently accurate for all purposes. Poor sheep will fall below the mark, and extra fat ones go over it.

Caked or Inflamed Udder in Cows.

Messrs. Editors—As the subject of caked or inflamed udder in cows has lately been mentioned in communications from some of your correspondents, I will give you some additional facts of my own experience in the matter. I recently had a severe case of caked udder in a three year old heifer, with her first calf. He period of gestation of 284 days expired on the 25th of May, but she did not calve till the 11th of the present month (June.) For ten days previous to calving her bag was very much swelled, and a part of this time caked badly, and the swelling extended along the belly. One week before she calved her bag had become so full that I commenced milking her night and morning, and continued to do so till she calved. This reduced the swelling and inflammation some, but did not prevent the udder from caking. To remove this I took some lamp or fish oil and rubbed on that part of the bag which was caked; it was applied night and morning, after she was milked, and well rubbed in. After a few applications of the oil the cake or hardness began to subside, and when she calved there was but little inflammation in the bag, and after the calf had sucked the first time the bag felt soft and natural, and has been so up to the present time.

In addition to the treatment already mentioned, two days before the heifer calved I took her from the pasture and put her in the barn, and fed her on dry hay only; this was done to check the flow of milk, and it had the desired effect.

Bacon fat has been highly recommended by those who have tried it for caked udder, the fat to be well rubbed on to the caked part of the bag.

In one or two instances where my cows have had caked bags in winter I have removed the swelling in the bag by rubbing on the fat taken from the vessel in which salt beef and pork had been boiled together with such other articles as usually constitute a farmer's *boiled dish.*

Wherein the virtue is in these articles which I have mentioned, I am unable to say, but in those cases where I have used them, or have known of their being used judiciously, they have afforded immediate benefit, and as some, or all, of these articles are generally to be found in all families who keep cows, they can be cheaply obtained, and easily applied, without risk or injury to man or beast. C. T. Alvord.

Wilmington, Vt., June, 1863.

P. S.—Since the above was written I have had another three year old heifer come in with her first calf. Her bag did not swell much previous to calving, and was not caked any, but as soon as the milk began to come into her bag it caked quite hard. I made an application of lamp oil to her bag once a day for four days, at which time the cake was all gone, the soreness appeared to be removed, and in a few days the bag assumed a healthy and natural appearance.

A few days since a neighbor of mine told me that a little camphor mixed with hog's lard, and rubbed on a cow's bag when caked would cure it after a few applications. C. T. A.

To Prevent Hog Cholera.

Prof. J. B. Turner sends the following to the Prairie Farmer:—Take one peck of ashes, four pounds of salt, one pound of black antimony, seven pounds of copperas, one pound of sulphur, one-quarter or one-eighth of a pound of saltpetre. Pound the ingredients fine and mix them well, and keep them constantly in a trough by itself; and each hog will eat what he needs of the medicine from day to day. If predisposed to cholera, they will eat it much more freely than if wholly well; and at such times the expense will be considerable.

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A thorough bred Durham Bull calf of superior quality, and handsome roan color, at low price if taken away soon.

He was got by "Major Anderson," bred by France Rotch, Otsego Co., N. Y., out of "Beauty," a descendant of my imported cow "Bessy," who made 16 pounds of butter per week.

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Knowing this powder to possess all the curative properties here set forth, we deem a fulsome tirade of words unnecessary, feeling assured that its OWN MERITS will secure for it a ready sale. Being composed of pure vegetable ingredients, it can be safely and judiciously given to that noble animal the HORSE. Its effects are no FALSE PAMPERING of the system, creating a bloated carcass with a premature shedding of the hair; but on the other hand, it strengthens the digestion, purifies the blood, regulates the urinary organs, thereby improving and protecting the whole PHYSICAL condition of the animal even when in an apparently healthy state.

To the Agriculturist and Dairyman it is an invaluable remedy for their NEAT CATTLE laboring under HOOF diseases, HOLLOW HORN, and other of the many complaints to which they are liable from a suppression of the natural secretions.

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HOGS, during the warm seasons, are constantly overheating themselves, which results in their getting Coughs, Ulcers of the LUNGS and other parts, which naturally has a tendency to retard their growth. In all such cases a tablespoonful mixed in a bucket of swill and given every other day will speedily remove all difficulties, and the animal WILL SOON INCREASE IN HEALTH AND FAT.

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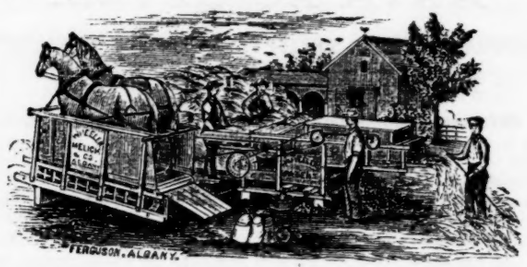

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